

COSMOGRAPHY
AND
GEOGRAPHY

In Two Parts:

THE FIRST,

Containing the General and Absolute Part of COSMOGRAPHY and GEOGRAPHY,

BEING A

TRANSLATION

From that Eminent and much Esteemed

GEOGRAPHER

WARRIUS,

Wherein are at large handled

All such Arts as are necessary to be understood for the true knowledge thereof.

To which is added the much wanted *Schemes* omitted by the Author.

THE SECOND PART, . . .

Being a Geographical Description of all the WORLD,

Taken from the Notes and Works of the Famous

Monsieur S A R S O N,

Late GEOGRAPHER to the *French* King:

To which are added

About an Hundred Cosmographical, Geographical and Hydrographical TABLES of several Kingdoms and Isles in the World, with their Chief Cities, Seaports, Bays, &c. drawn from the MAPS of the said JANSON.

Illustrated with MAPS.

L O N D O N,

Printed by S. Roycroft for Richard Blome, MDC LXXXII.



To the Right Noble

CHRISTOPHER,
DUKE OF
ALBEMARLE,

Earl of Torrington, Baron Monk of Pothoridge, Beauchamp and Tex, Knight of the Most Noble Order of the Garter, Lord Lieutenant of Devonshire and Essex, Captain of His MAJESTIES Life Guards and Guards of Horse, One of the Gentlemen of His Bed Chamber, and One of His Most Honourable Privy-Council.

MY LORD,



WHEN I consider You are the Duke of ALBEMARLE, the very Title is so Great, that it puts a damp on my Quill, and disables me from making any sufficient Apology for this presumptuous Dedication; But on the other hand, when I consider that You are Heir

The Epistle Dedicatory.

to Your now Glorious Fathers Vertues, as well as to his Titles and Dignities; and that his Goodness and Humility are entailed on You his only Son, I cannot want a Motive to this Ambition. My Lord, This Volume is a Cosmographical and Geographical Description of the WORLD, in which Your Name is great and precious; and although in it self is excellent, yet being Countenanced by Your Protection will admit of no Equals. This being granted by Your Grace's Favour, I have no more to beg, but that Your Fathers Magnanimity, Valour, Grandure and Heroick Actions may be so deeply imprinted on You, that these Kingdoms may not only love and admire You, but that Your Name and Memory may be precious to future Ages; which is the Prayer of,

MY LORD,

Your Graces most Obedient Servant,

RICHARD BLOME.



THE

Preface to the Reader.



Amongst all those Arts or Sciences which Man ought to have a Knowledge of, the Description of the Earth and Heavens, which is termed COSMOGRAPHY and GEOGRAPHY (for the Utility and Dignity thence arising) ought not to have the least estimate; the Soul being naturally inclined to the exploration of COSMOGRAPHY and GEOGRAPHY, as a necessary inherent in it; which seems evident; in that Men of undoubted Judgments, out of a singular desire to propagate this Study, and sparing no Cost or Labour, have travelled over the greatest part of the Universe. Unto this we add, That seeing the Earth was created by God to be the habitation of Man, if by brevity of Life, and Humane imbecility, we cannot so well Travel with the Body, yet at least-wise we would visit, behold, and contemplate it in our Minds; for its beauty, admirable elegancy, and the Honour of the Creator. There are many other Forceable Arguments, by which it appears all Men are generally inclined to the knowledge thereof: As the Commodities of every Nation are peculiar to it self, so that (according to Divine Providence) one Nation cannot well subsist without the help of another, to which end they are transported by way of Exchange and Traffick unto other Countries. But, to shew the use of it in all Arts and Sciences; there being none but receive some light and assistance from COSMOGRAPHY and GEOGRAPHY. To this the immortal Stagyrice, and Divine Plato flieth as a refuge, when a numberless multitude, and variety of Natures secrets in Lands disjoyned, and the profound Ocean sometimes nonpluseth or staggers their Capacities. The Moral PHILOSOPHER is a Non-essence, being unskilled herein; for how can he search into, or inform himself of the Genius, Natures, Inclinations, or Studies of Men, and what is most proper for every distinct Nation or People (being his adequate subject) without this Chart to steer by? The PHYSITIAN is necessitated to have a great insight in this Noble Study, both for observing the Drugs and Medicaments, transported from Foreign Parts, &c. judging their Natures and Effects from the several Climates, &c. but especially for the variety of Bodies, or Constitutions, which are habituated according to the Climate and Soil of the Country. Take this away from the MARTIALIST, his Stratagems fail, and his whole Knowledge is in a feeble condition. The MERCHANT and NAVIGATOR

To the READER.

are compelled unto an insight heretofore, for the knowing the Situation and Climate of Countries, their Circumferences; the Latitude and Longitude of Places, the Currents of Rivers; what Commodities each Region aboundeth in, and what they are deficient of; and the Manners, Customs, and Dispositions of the Inhabitants. Without COSMOGRAPHY and GEOGRAPHY all History is a thing of little use, the affinity of them both being such, that they seem to center both in one. And, to come more home to the matter, the History of the Scythians, Indians, Ethiopians, and Americans, are only expressed unto us by Geographers. Farther, Historiographers make use of Geographical Descriptions for the better and more full illustration of their History: And lastly, in reference unto POLICY or Management of State, no Wars, Societies or Leagues, can be well made, with a Foreign State or Kingdom, except there be first a perfect knowledge of the Nature, Disposition, Manners, Customs, Strength, &c. of the Nation or People with which such a Combination or League, &c. is to be made and established. Henry, King of Castile, though much weakened by Sickness, yet neglected not to send frequent Embassadors into Asia, that he might have a continual information of the Manners and Strength of those Provinces: And the same was done by Moses, before his setting foot into Palestine. Now Nature, which exhibiteth and discovereth her elegance and force in the production of variety of things, hath not only diversly distinguished the Faces and Physiognomy, but also the Souls and Minds of Men; The Modes, Genius's, Customs and Natures of Nations being vastly different; unto this very end she hath variously disposed the causes themselves. GEOGRAPHERS have divided the World into Climates, and every Climate is distinctly subject to the Dominion of some Planet, as the chief cause of this Diversity; where observe, that the first Climate, which extendeth through the Meroc (an Isle, made so by the River Nilus) is subject to Saturn. Those under the second Climate, is attributed to Jupiter, and passeth through Sene, a City in Egypt. Those inhabiting under the third, is subject to Mars, and extendeth through Alexandria. Those under the fourth, is appropriated to the Sun, and stretcheth through Rhodes, and the middle of Greece. Those under the fifth, which passeth through Rome, and divideth Italy from Savoy, is attributed to Venus. Those under the sixth, where Mercury is predominate, passeth through France. And those under the seventh, which is subject to the Moon, passeth through Germany, the Low Countries and England; which said Planets have their Operations or Influences on the Inhabitants dwelling under each of the said Climates. So that although the glorious and eternal Luminaries of Heaven have an efficacious operation, yet notwithstanding the Disposition of the Earth, hath a far greater prevalence; seeing that through the various Situation of Hills and Vallies, we experimentally find more great and different effects of the Celestial Rays, which are also contemporated by the Rivers and Lakes. This can be denied by no man, that Nature is admirable in her Works; sometimes as it were on set purpose deluding the curiosity of Humane wisdom, by receding from the ordinary Laws of Causes. Who can render a sufficient reason of that which is testified by Mariners concerning the Region of Malapur, in which is seated Calicut? an exceeding high Mountains, topping the Clouds, dividing this Province throughout

To the READER.

throughout, and ending in a Promontory, which is now called Comorium, which although it hath the same Altitude of the Pole, yet when the Winter rageth, and the Waters swell on the one side, on the other side the Fields and Towns are scorched with excessive heat, and the Sea calm. Wherefore this diversity which is discovered in the Climates, the Situation of Provinces, (Contemporation of the Air and Elements, do variously discriminate the Constitutions of Men, and those Constitutions, their Natures; for the manners of the Mind follow the temperament and disposition of the Body. The Septentrional or Northern People being remote from the Sun, and by consequence inhabiting in cold Countries, are Sanguine, Robust, full of Valour and Animosity; hence they have alwaies been Victorious and predominant over the Meridional or Southern Nations; as the ASSYRIANS over the CHALDEANS; the MEDES over the ASSYRIANS; the PARTHIANS over the GRECIANS; the TURKS over the ARABIANS; the GOTHs over the GERMANS; the ROMANS over the AFRICANS; and the ENGLISH over the FRENCH. They love Freedom and Liberty, as those also do which are Mountaineers, as the Helvetians, Grisons, and Cantabrians. The Nations proximate to the Sun, have their Blood wholly exsiccated by immoderate Heat; hence the Inhabitants of those Places are melancholy, and profound in the penetrating of the secrets of Nature: For all the Northern Nations receive the Mysteries of the Sciences from the AEGYPTIANS and ARABIANS. The Provinces which are immediately between both Torrid Zones enjoy a Benign Heaven; so that they flourish in Religion, Justice and Prudence. The Mutations of Governments, the Transmigration and Emission of Colonies, Converse, Matrimony, War and Peace; also the Motions of the Celestial Spheres, which drive from the Poles, and the Zodiack of the Primum Mobile, the Heavenly Images on these Inferiour Bodies, do change and alter the Habits, Manners, and also Nature it self. If we have recourse unto History, we shall find the GERMANS noted of old for lofty Minds, and the ITALIANS on the contrary too abject and low, which difference now cannot be discerned. Nations have Swayed and been Predominate by turns, and as long as the Monarchy hath had duration amongst them, Vertue hath flourished, Arts and Arms have gone hand in hand, which afterwards with the Ruine of the Empire hath been smother'd in its Asbes, and received Vivification in another place; yet notwithstanding these Obstacles every Nation hath certain Propensions and fixed Affections appropriate to every one, which will adhere to Forrainers, if that they long remain amongst them.

The Intelligent Reader, who desireth a Knowledge in these and other Particulars, with a throughout Prospect of the Utility of COSMOGRAPHY and GEOGRAPHY, may consult the Work it self.

RICHARD BLOME.

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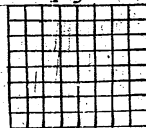
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GEOGRA-
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may be divi-
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Parts;**

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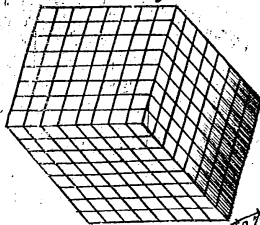
A Straight Line

A Superficies

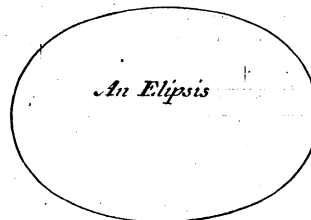
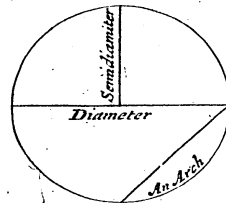
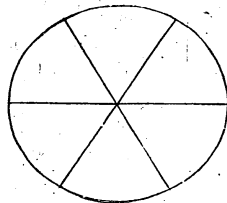


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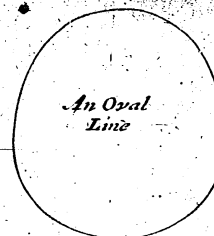
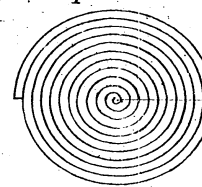
A Solid body



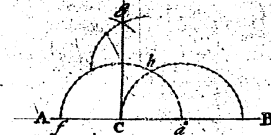
A Circular line



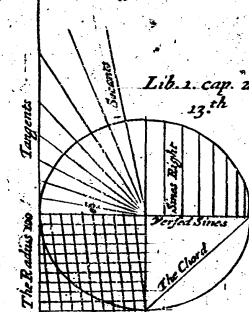
A Spiral Line



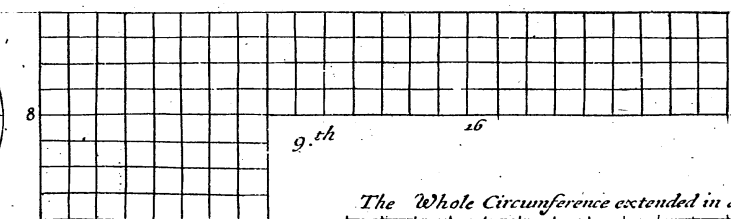
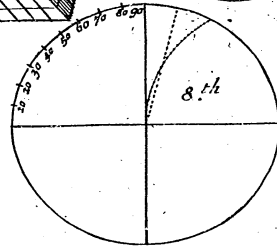
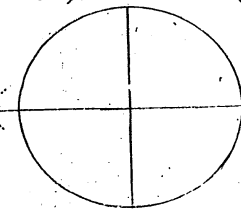
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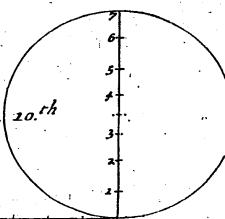
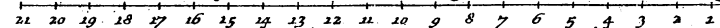
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The Whole Circumference extended in a straight Line



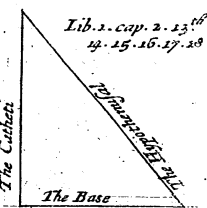
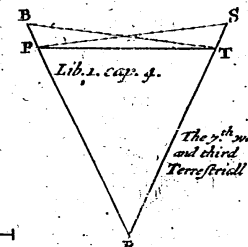
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- A Half English foot.
- A Half Dutch and also an old Roman half foot
- A Half foot of Paris in French. And also a half Greek foot.
- A Half foot of Antwerp in Flanders.
- A Half Egyptian foot from Alexandria.
- A Half Babylonian foot mentioned by Historians.
- A Half foot of Venice.
- A Half foot of Toledo in Spaine.
- A Half foot of Vienna in Austria.

The Proportion of diverse Miles according to their compared Length

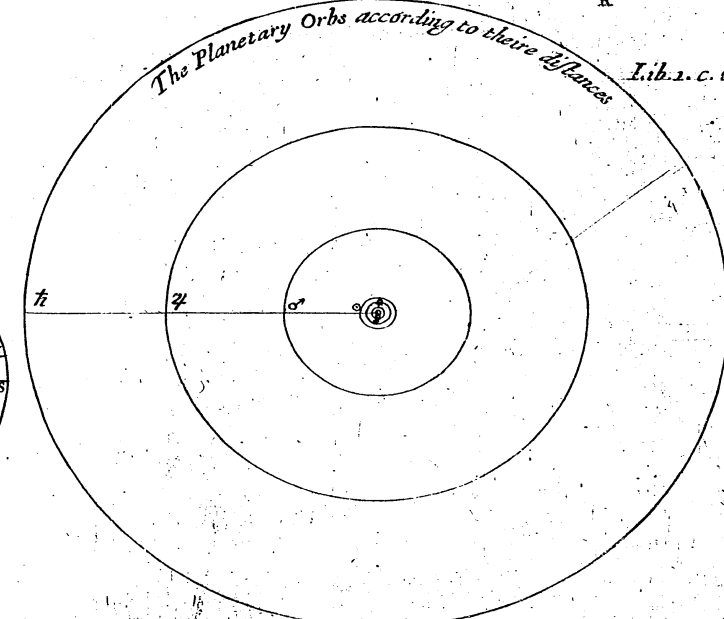
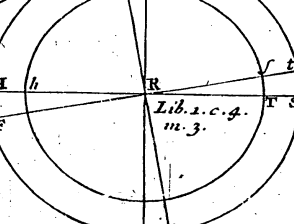
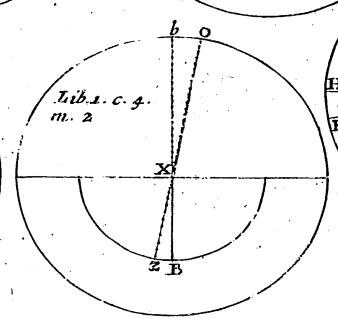
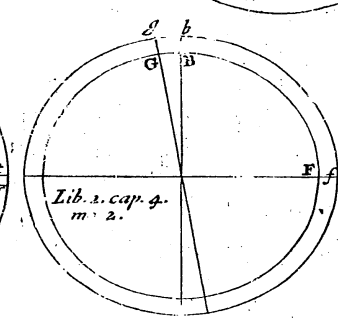
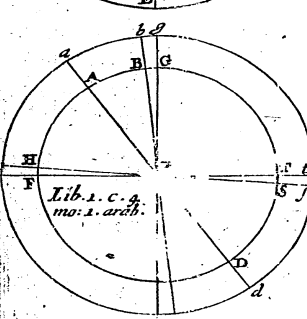
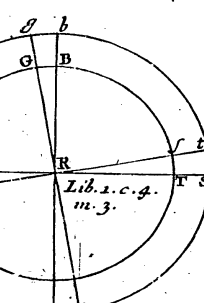
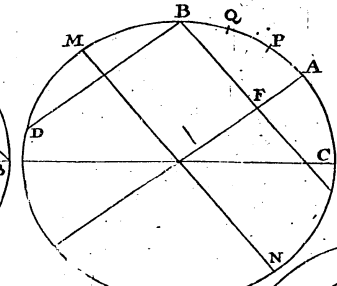
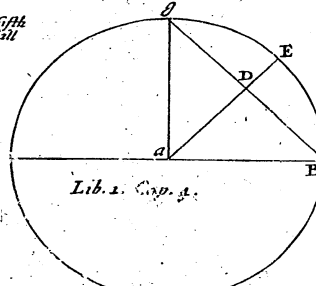
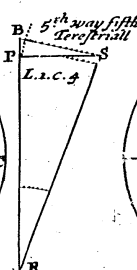
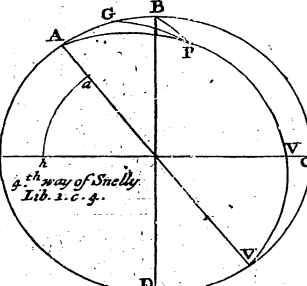
Lib. 1. c. 2.

- An Indian Mile
- A Russian Mile
- A Mile of Cambaja
- An English Mile
- A French Mile, And almost an old Arabian League
- A Holland Mile.
- A Spanish League
- A German Mile
- A Swedish Mile



The Cathetus

The Base



The Planetary Orbs according to their Distances

Lib. 1. c. 6.

First Plate
Folio 1.



THE
A B S O L U T E
OR
COMPLEAT PART
OF
General Geography.

BOOK I. SECT. I.

CHAP. I.

Concerning the Precognita's, or things known before the handling of the Art it self; as the Definition, Division, Object, Properties, Principles, Order, Method, Original, Excellency, and other affections of GEOGRAPHY; to be spoken of by way of Preface.

THE Custom or fashion hath for a long time prevailed, that they who compleatly treat of, and handle any Art or Science, do in the first place declare some things touching the Conditions, Method, Constitution, and other properties of their Doctrine. Neither do I think that this is done by them without reason; so that it be performed without any *Supbstitue* or *encroachment*; seeing that by such like *fore-hand Instruction*, the Readers Understanding may before-hand conceive a certain Idea or Platform of the whole Art or Science to be afterwards handled, or at least may understand the Argument or Contents thereof; and wihal may gather thereby, how he ought to order himself in the studying the same. I therefore shall in this Chapter deliver some few passages concerning the same.

B

The

The Definition of Geography.

GEOGRAPHY is called a *liberal Mathematical Science*, which teacheth the affections or qualities of the *Earth*, and the parts thereof depending of quantity; that is to say, the *figure, place, magnitude*, and other like properties.

Geography by some (but too strictly) is taken for the only description and placing the Countries of the Earth; And on the contrary, by others it is extended (but too largely) to the political description of every Country. But these Men are easily excused, seeing they do it to retain and stir up the Readers affections; who otherwise by a bare account, and naked description of those Countries, would be made drowsy and heedless.

The Division of Geography.

We will divide *Geography* into General and Special, or Universal and Particular. *General or Universal Geography* is that, which doth generally consider the *Earth*, and declare its properties without any respect of particular Countries. *Special or Particular Geography* is that, which teacheth the constitution and placing of all single Countries, or every Country by it self. And this particular *Geography* is twofold, to wit *Chorography* and *Topography*. *Chorography* proposeth the description of any Country, having at least a mean magnitude. *Topography* describeth any little tract of Land, or place.

In this Book we will present you with a *General Geography*; which we have distributed into Three parts, to wit, the *Absolute part*, the *Respective part*, and the *Comparative part*. In the *Absolute part* we will consider the very Body of the Earth, with its parts, and proper affections and qualities; as *figure, magnitude, motion, Lands, Seas, Rivers, &c.* In the *Respective part* we will contemplate those properties and accidents which from *Celestial causes* happen to the Earth: And lastly, the *Comparative part* shall contain an explication of those properties, which arise from the comparing of divers places of the Earth.

The Object of Geography.

The *Object of Geography*, or *Subject* about which it is employed, is the *Earth*; but principally its *Superficies* and *parts*.

The Properties of Geography.

Those things which deserve to be considered in every Country, seem to be of a triple kind, to wit *Celestial, Terrestrial*, and *Human*; and therefore may be declared in the particular *Geography* for every Country, with the profit of Learners and Readers.

I call those *Celestial properties* which depend on the apparent motion of the *Sun, Stars*, and other *Planets*; and seem to be Eight. 1. *The elevation of the Pole, the distance of the place from the Equator, and from the Pole.* 2. *The obliquity or variation of the daily motion of the Stars above the Horizon of that place.* 3. *The Quantity of the longest and shortest day.* 4. *The Climate and Zone.* 5. *Heat and Cold, and the Seasons of the year: also Rain, Snow, Winds, and other Meteors*; for although these things may be referred to *Terrestrial properties*, yet because they have a great affinity with the four Seasons of the Year, and motions of the *Sun*; therefore we have mentioned them in the order and rank of *Celestials*. 6. *The rising of the Stars, their appearance and continuance above the Horizon.* 7. *The Stars passing through the Vertical point of the place.* 8. *The quantity or swiftness of the Motion, whereunto, according to Copernicus his Hypothesis, each one is every hour revealed about.* According to Astrologers a Ninth property may be added; because they do appoint one of the Twelve Signs of the *Zodiac*, and the peculiar Planet of that Sign, to rule and govern every Country. But this

Doctrin

Particular Geography twofold, Chorographical and Topographical. General Geography, and its parts.

The Celestial properties of Geography.

Doctrin hath ever seemed to me frivolous, neither can I perceive any ground for it: nevertheless at the end of our *Special or Particular Geography*, we will reckon up this their distribution.

These may suffice for the *Celestial affections or properties*. I call those *Terrestrial properties*, which are considered in the place of every Country it self; of which I shall note Ten. 1. *The bounds and circumference of the Country.* 2. *Its Figure.* 3. *Its Magnitude.* 4. *Its Mountains.* 5. *Its Waters, as Rivers, Springs, Bays of the Sea.* 6. *The Woods and Deserts.* 7. *The Fruitfulness and Barrenness, as also the kinds of Fruits.* 8. *The Minerals, or things dig'd out of the Earth.* 9. *The living Creatures.* 10. *The Longitude of the Place*, which ought to be added to the first *Terrestrial property*, to wit the *Circumference*.

I make the third kind of Properties, which are to be considered in every Country, to be *Humane*, which do depend of the Men, or Natives and Inhabitants of the Countries: of which *Humane properties* about Ten also may be made. 1. *The stature of the Natives, as to their shape, colour, length of life, Original, Meat, Drink, &c.* 2. *Their Trafficks and Arts in which the Inhabitants are employed.* 3. *Their Vertues, Vices, Learning, Wit, &c.* 4. *Their Customs in Marriages, Christnings, Burials, &c.* 5. *Their Speech and Language.* 6. *Their State-Government.* 7. *Their Religion and Church-Government.* 8. *Their Cities, and most renowned Places.* 9. *Their memorable Histories.* And 10. *Their famous Men, Artifices, and Inventions of the Natives of all Countries.*

These are the three sorts of Properties to be declared in *Special Geography*; although those *Terrestrial properties*, which make up the third rank, are not so rightly refer'd to *Geography*: But we must yield somewhat to Custom and the Profit of Learners. We will besides these, joyn many Chapters to *Particular Geography*, concerning the practice of *Geography*.

But in *General Geography*, which we will unfold in this Book; first the *absolute properties of the Earth*, and its constitution, are considered. Lastly, in the *Comparative part* those things shall be proposed, which are offered unto us in the comparing one place with another.

The Principles of Geography.

The *Principles* which *Geography* useth for the confirming the truth of her Propositions, are threefold: 1. *Geometrical, Arithmetical, and Trigonometrical Propositions.* 2. *Astronomical Precepts and Theorems*; although it may seem like a miracle for the knowledge of the Earth in which we dwell, to use the *Celestial Bodies*, which are so many thousand miles remote from us. 3. *Experience*; for indeed the greatest part of *Geography*, especially that which is Particular, is upheld by the only Experience and Observation of men who have describ'd every Country.

The Order of Geography.

Concerning the *Order* which I esteem fitting to observe in this Art of *Geography*, it hath been already spoken in the *Division and Explication* of the properties thereof; yet here meets us a certain difficulty concerning the Order to be observed in the explication of these Properties: Forsooth, whether to all Countries their own Properties are to be attributed, or whether the Countries themselves are to be ascribed to the Properties generally explicated? *Aristotle* in the first Book of the *History of Living Creatures*, as also in his first Book of the *Parts of Living Creatures*, moveth the like doubt, and disputes it at large; whether according to the single sorts of *Living Creatures*, their Properties are singly to be reckoned up, or else, whether these Properties are generally to be declared, and the *Living Creatures* in which they may be found are then to be subjoyned? The like difficulty occurs also in other parts of Philosophy. We in *General Geography* have generally unfolded some Properties, which in *Special Geography* we will apply to the application of single Countries.

The

The Humane properties of Geography.

The Method of Geography.

As touching the *method* and manner of proving the truth of *Geographical* Tenents, very many are proved in *general Geography* by Demonstrations properly so called, especially *Celestial Properties*: but in *Special Geography* (the *Celestial Properties* only excepted, which may be demonstrated) are in a manner declared without demonstration, because experience and observation doth confirm them, neither can they be proved by any other means.

Also very many *Propositions* are proved, or rather demonstrated, by the *Terrrestrial Artificial Globe*, and also by *Geographical Maps*; and some of these *Propositions* which are thus explained upon the *Globe*, &c. may be confirmed by lawful demonstrations. Again, some *Propositions* can in no wise be so proved, but are therefore received; because we suppose, that all places in the *Globe* and *Maps* are so disposed, even as they lie on the *Earth*. Yet in these things we will rather follow the *Descriptions* made by Authors of *Geography*. The *Globe* and *Maps* serve for the clearing and more easie comprehension thereof.

The Original of Geography.

The *Original* of *Geography* is not New, nor brought into the World at one birth, neither came she to us from one Man: but her Principles and Foundations were laid long ago, yea many Ages since; although ancient Geographers were employed only in describing Countries, which is the part of *Chorography*, and *Topography*. The *Romans* were accustomed, when any Country by them was subdued, to shew in their Triumph the *Chorography* thereof lively pencilled, and drawn on a Table, and flourished with Pictures to the Beholders. There were besides at *Rome* in *Lycullus* his Porch, many Tables of *Geography* exposed to the view of all men. The Senate of *Rome* about an hundred years before Christs Birth, sent Surveyors and Geographers into divers parts of the World, that they might measure out the *Earth*; but they came far short thereof. *Neco* King of the *Egyptians*, many Ages before the Birth of Christ, commanded that the whole outer-side of *Africa* should be discovered by the *Phœnicians* in three years space. King *Darius* commanded, that the Mouths of the River *Indus*, and the *Ethiopian* Eastern-Sea should be searched out. *Alexander* the Great in his Voyage to *Asia*, took with him *Diognetus* and *Beton* (as *Pliny* noteth) two Surveyors and Describers of his Journeys; out of whose Annotations and Journals *Geographers* of succeeding Ages took many things.

Ancient Geography very imperfect.

But the *Geography* of the Ancients was very lame and imperfect; for first they knew not *America* in the least. 2. The *Northern-Lands*. 3. The *Southland* and *Magellan* were utterly unknown to them. 4. They knew not whether the *Earth* might be sailed about, or the Main Ocean with a continual trace did encompass it; but yet I deny not, but that some of the Ancients were of that opinion; yet I utterly deny they knew it certainly. 5. They knew not whether the *Torrid Zone* were habitable. 6. They were ignorant of the true dimensions of the *Earth*, although they wrote many things in this business.

The Excellency of Geography.

First, the study of *Geography* is commended to us by the great worthiness thereof, because it most of all becometh Man, being an Inhabitant of the *Earth*, and endued with Reason above all Living Creatures. Secondly, It is also a pleasant thing, and indeed an honest recreation to contemplate the Kingdoms and Properties of the *Earth*. Thirdly, The commodity and necessity of it is notable, inasmuch as neither Divines, Physicians, Lawyers, Historians, nor other Professors can want the knowledge thereof. But the Excellency of *Geography* hath been sufficiently handled.

I place

I place hereunder a Table, which openeth the order in *Special Geography*, to the observing the Explication of single Countries.

- | | | | |
|------------------|-----------------------------------|------------------------------------|---|
| Ten Terrestrial, | 1. | Limits and circumscription. | |
| | 2. | Longitude of place, and situation. | |
| | 3. | Figure. | |
| | 4. | Magnitude. | |
| | 5. | Mountains, | { The Appellation, Situation, and Altitude. |
| | | | { Their properties, and things contained in them. |
| | 6. | Mines. | |
| | 7. | Woods and Deserts. | |
| | 8. | Waters, | { The Sea, Lakes, Marshes, Rivers. |
| | | | { Their Springs, Inlets, Tracts, and Latitude. |
| 9. | Fertility, Sterility, and Fruits. | | |
| 10. | The Animals. | | |

Special Geography considereth in every Region,

Eight Celestial,

- | | | |
|------------------|----|---|
| Eight Celestial, | 1. | The distance of place from the Æquator and Pole. |
| | 2. | The obliquity of Motion above the Horizon. |
| | 3. | The Quantity of Dayes. |
| | 4. | The Clime and Zone. |
| | 5. | The Heat, the Seasons of the Year, the Winds, Rain, and other Meteors. |
| | 6. | The rising and stay of the Stars above the Horizon. |
| | 7. | The Stars passing through the Vertex of the place. |
| | 8. | The celerity or quantity of their Motion according to the Hypothesis of <i>Copernicus</i> . |

Ten Human Things,

- | | | |
|-------------------|-----|---|
| Ten Human Things, | 1. | The Stature, Life, Meat and Drink, and the Original of the Inhabitants. |
| | 2. | The Income, Arts, Merchandize or Traffick. |
| | 3. | Vertues and Vices, the Genius and Erudition. |
| | 4. | Customs about Marriages, Children, and Funerals. |
| | 5. | Speech and Language. |
| | 6. | Politick Government. |
| | 7. | Religion, and Ecclesiastical Affairs. |
| | 8. | Cities. |
| | 9. | Memorable Histories. |
| | 10. | Famous Men and Women, Artificers, and Inventions. |

C

CHAP.

C H A P. II.

Certain things taken out of Geometry and Trigonometry, which it becometh the Students of Geography to know.

Geometry and Arithmetick necessary to be understood in Geography.

PLAID wisely called *Geometry* and *Arithmetick* two Wings with which mens minds might soar up into Heaven, that is, might search out the *Motions* and *Properties* of the *Sun* and *Stars*. Those *Sciences* are no less necessary in *Geography*, as that man may truly understand, who desires to learn it without any hindrance. In the mean while, *Geography* is content with fewer circumstances than *Astronomy*. And because many men are taken up with the study of *Geography*, who have no knowledge in those Arts, I shall set down such things as are most necessary for the study hereof: not allowing of that naughtiness custom which is too much used by many Masters in these days, in teaching Youth *Philosophy* before they have tasted of *Geometry* and *Arithmetick*. I shall suppose the Reader to have the knowledge of *Addition*, *Subtraction*, *Multiplication*, *Division*, and of the *Rule of Three*, or *Golden Rule*; therefore I shall not treat thereof: and if there be any ignorant in them, they may be instructed therein by the lively voice of a Master; my purpose being to give *Geometrical Matters*.

See Scheme. Three sorts of Magnitudes in Geometry.

Sorts of Lines.

A Circle.

Diameter of a Circle.

An Arch. A Quadrant. The Complement.

How to draw a Perpendicular Line. See Scheme.

How to divide a Circle into four parts. See Scheme.

To divide a Circle into Degrees.

First then, *Geometry* acknowledgeth three sorts of Magnitudes, by which it measureth forth all things, to wit, *Lines*, *Superficies*, that is, *Outsides* or *Surfaces*, and *Solid Bodies*: neither is there any fourth thing given in Nature.

Secondly, A *Line* is one strait, another crooked, and the crooked *Line* is uniform, or circular, or different and unlike in fashion; as *Oval Lines*, *Lines* winding about like *periwinkles* or *steeple stairs*, or *Helicall Lines*.

Thirdly, A *Circle* is called a space, or plain *Superficie* and *Figure*, included in a *crooked Line*; in which space is some point, from which all *strait Lines* drawn to that ending crooked Line, are equal. And that *crooked Line* bounding in that space, is called the *Circular Line*, or *Peripherie* of the *Circle*. The middle point is called the *center* of the *Circle*.

Fourthly, The *Diameter* of the *Circle* is the *strait Line* drawn from either side through the *center* of the *circumference*.

Fifthly, An *Arch* is called a part of the *circumference* of a *circle*. A *Quadrant* is called the fourth part of the whole *circumference*. The complement of any *Arch* is called the *Arch* by which it differeth from, or faileth of a *Quadrant*. The *Excess* of an *Arch* is by which it exceeds a *Quadrant*.

The Probleme.

Sixthly, A *strait Line* being given, and a point in it, or out of it, to draw from that point a *perpendicular Line*. Let the *Line* given be A B, the *Point* C; let any open space of the *Compasses* be taken, and one foot thereof put in C, and with the other foot let the *Line* be cut in D and F; then in the *Center* D, let the *Arch* be described over the part d f: also in the *Center* f, let another *Arch* be described in g and h, and let g h be drawn, and this shall be a *Perpendicular Line*.

Seventhly, To cut or divide a circle and circumference into four parts. Let there be drawn one *Diameter*, and from the *center* let there be raised a *perpendicular line* over it: And this also shall be a *Diameter*, and the *circumference* together with the *circle*, shall be cut into four equal parts or *quadrants*.

Eighthly, To divide the circumference of a circle into degrees. But a degree is the three hundred and sixtieth part of a circumference: for indeed Mathematicians do cut a circumference into three hundred and sixty parts; and they

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they divide a degree into sixty first minutes, and then again they divide the first minute into sixty seconds.

Therefore to dispatch this *Probleme* above proposed, there being first taken a *quadrant* of the *circle*, let then, by the open space of a pair of *Compasses*, the half *diameter* of the *circle* be taken; and by this space of the *Compasses*, let the *Arch* be taken away from the *circumference*. This *Arch* shall be thirty degrees; and there shall remain in the *quadrant* thirty degrees, which being divided into two parts, you shall have fifteen degrees, which again being mechanically divided into three parts, you shall have five degrees; and these again are to be divided into five parts, which shall be the degrees themselves. But these things by the help of *Mathematical Instruments*, are more readily and perfectly performed.

Ninthly, To find out the Area or contained space of a *Quadrangle* *Strait-angled*, *Right-angled* or *Oblique-angled*. Let one side be multiplied into the other; the product shall show the space contained. But it is to be known, that *Lines* are measured by *Lines*; *Superficies* or *Spaces* are measured by *Measures*, which may be *Superficies*, and they indeed square. Lastly, *Bodies* of *Solid things* are met by *Measures*, which may be *Bodies* and *Solid Cubicks*. Thus we measure the sides of an House with *Feet-lines*, but we sitte the floor or pavement of an House with *Square feet*; and we describe the capacity or solidity of a House by *Cubick feet*.

Tenthly, The half *Diameter*, or *Diameter* of a *Circle* being given, to find out in the same Measure the *circumference* of the *Circle*: and contrariwise, The *circumference* of the *Circle* being given, to find the *Diameter* thereof, and that indeed the nearest way that can be. The solution of the *Probleme* depends of the proportion of the *diameter* to the *circumference*, which according to the most famous demonstration of *Archimedes*, is in a manner as 7. to 22; or more accurately, as 10000000000 to 31415926535; so 7. to the same *circumference*.

Contrariwise, if a *circumference* be given, but a *diameter* may be demanded; let it be wrought as 22 to 7. or as 31415926535 to 10000000000: so a *circumference* given according to the *diameter* demanded.

Eleventhly, The *circumference* of a *Circle* being given in feet, or miles and a *Diameter*: or also a *circumference* alone, or a *Diameter* alone being given, to find out the space of the *Circle*, in feet or square miles. According to the first Proposition, let the given *circumference* into the fourth part of the *diameter*; or let half the *circumference* be multiplied into half the *diameter*; and the product shall be the space demanded. According to the second Proposition, it is better to find out first the half *diameter*, or half *circumference*, by the foregoing *Probleme*, although it may be dispatched without it.

Twelfthly, The half *Diameter*, or *Diameter* of any *Globe* being given, to find the *Superficies* thereof in square measure, and its solidity in Cubick measure. The *Globe* is called a round or solid Body, in whose middle there is some point, out of which all the *strait Lines* drawn to the *Superficies* are equal. And this point in the middle is called the *center* of the *Globe*. The *Line* through the *center*, is called the *diameter*; and it is called the *axis*, if the *Globe* be turned, or rolled about that *diameter*. Moreover, if the *Globe* be cut any way, howsoever the Section is the *circle*. And if it be cut through the *center*, or we imagine it to be drawn through the *Plain*, the Section shall be the *circle*, whose *diameter* is the same, as the *diameter* of the *Globe* it self. And such *circles* are called the greater *circles* of the *Sphere* or *Globe*: the rest are called the lesser *circles* of the *Sphere*.

Therefore for the resolution of the *Probleme*, first let the *circumference* of the *circle* be found out by the given *diameter*. Then let the *diameter* be multiplied into this *circumference*, and then the *superficies* of the *Globe* shall be the product in square Measure.

Furthermore, let this *superficies* be multiplied by the sixth part of the *Diameter*; and the product shall be the solidity of the *Globe* in Cubick Measure.

See Scheme.

To divide a Circumference into Degrees.

To find the Area of a Quadrangle.

See Scheme.

The Diameter of a Circle being given, to find out the circumference of the Circle, in the same Measure.

See Scheme.

The Circumference of a Diameter being given in feet or miles, to find out the space of the Circle in feet or square miles.

The Globe called a round solid body.

See Scheme.

Thirteenthly,

A Triangle.

Thirteenthly, A Triangle is called *rebtangled*, one side of which is perpendicular upon the other side; or with it maketh a *strait* Angle of ninety degrees. These two sides are called *Catheti*; the third side is called *Hypotenusa*.

The measure of the Angle in the Arch.

The Measure of the Angle is the *Arch*, which is described, a center being taken in the top of that Angle, to wit, of how many degrees that *Arch* intercepted between the flanks of the Angle is, or so many degrees that Angle is said to be. So a *strait* Angle is said to be ninety degrees, because the *Arch* so described is always the *Quadrant*, or fourth part of the circumference of the circle.

The Sine of an Arch.

The Sine of any *Arch* is called a *strait* Line, which is drawn perpendicular from the extrem of the *Arch* into the diameter, drawn through the other extrem of the *Arch*.

A Tangent of the Arch.

A *Tangent* of that *Arch* is said to be a *strait* Line touching the *Arch* in one end, and a *strait* ended Line, which is drawn from the center through the other end of the *Arch*. But this Line thus drawn is said to be the *secant* of that *Arch*.

But the Sine of an Angle is said to be the Sine of that *Arch* which measureth that Angle: so the *Tangent* of the Angle, and its *Secant*.

Tables called the Mathematical Canon or Rule.

Furthermore it is to be known, that by the labour and study of *Mathematicians*, Tables were made, in which the half diameter of 100000 (or of more Cyphers) being taken, the *Sines*, and *Tangents*, and *Secants* of all the *Arches* of the circumference are found out. For example sake; 2 degrees, 10 degrees, 20 degrees, 32 minutes, &c. And these Tables are called the *Mathematical Canon* or *Rule*; and have infinite Commodities in all the *Mathematical* and *Natural Sciences*. And therefore I am willing to teach the Studious of *Geography* these few things: But the principal use thereof is in the measuring as well of *Spherical* as *plain* Angles. But because the measuring of *Spherical* Angles hath some difficulty, which seemeth necessary only for them who desire to enter themselves more profoundly into *Art*: therefore we will speak only of *Triangles* *strait* angled, whose dimension any one may easily apprehend.

Rules to be observed.

Two Theorems, whose use is frequent in *Geography*.
Fourteenthly, Three Angles of what Triangle soever, being taken together, are equal to two *strait* Angles, or are 180 degrees: and therefore two Acute in a Triangle *strait* angled, makes 90 degrees. Furthermore, if a *strait* Line touch a circular Line, and from the point of their contact or meeting, a *strait* Line be drawn to the center of the Circle, this makes a *strait* Angle with the Line *Tangent*.

Fifteenthly, But these are the Problems whose use is frequent. First, the *Hypotenusa*, and together the *Cathetus* of a Triangle *strait* angled, being given, to find out the Angle contained, or another Acute. For the finding out of which, let it be wrought according to the *Golden Rule*, as the given *Hypotenusa* is to be the given *Cathetus*, so the whole Sine 100000 (which number is the half Diameter taken in the Tables of *Sines*) is to the Sine of the other Angle. This Sine sought out in the Canon, will shew the *Arch* or quantity of the Angle, which joyneth to the *Hypotenusa*. But the contained Angle is the complement of the found out Angle, to 90 degrees. Therefore, if the found out number be subtracted from 90 degrees, the demanded Angle is left remaining. Secondly, A *Cathetus*, and an acute adjacent Angle being given, to find out the *Hypotenusa*. Let this be wrought according to the *Golden Rule*: as the Sine of the complement of the given Angle is to 100000 (or to 1000000 in the greater Canon): so is the given *Cathetus* to the demanded *Hypotenusa*. Thirdly, Two *Cathetuses* being given, to find the Angle adjacent to either of them. Work thus; as one *Cathetus* is to another, so is the whole Sine 100000 to the *Tangent* of the Angle which is adjacent to the first assumed *Cathetus*. Fourthly, A *Hypotenusa*, and one acute Angle being given, to find either *Cathetus*. Let the Work proceed thus; as the whole Sine 100000 is to the Sine of an Angle, which is opposite to the *Cathetus* demanded, so the given *Hypotenusa* is to that *Cathetus*.

Con-

Concerning divers Measures.

Because the use of Measures is very frequent in *Geography*, and that also divers People use sundry Measures, therefore I shall give the Reader some Advancements therein.

The famous Measure is the length of a Foot; but this is very different. The *Rhindlandish* Foot of *Snellius* is the now usual *Mathematicians* Foot, which is equal to the Old *Roman* Foot. And because *Snellius* was most diligent and curious in measuring the Earth, therefore that *Rhindlandish* foot is deservedly taken for the rule of all Measures.

This *Decemped*, or Land-measuring Rod, containeth ten foot *Rhindlandish*. It is also called a *Perch* or *Pole*; but *Geodesians* or *Surveyors* make a *Rhindlandish* *Perch* to be twelve *Rhindlandish* foot, or else sixteen foot *Germish*, or or sixteen foot and an half *English*. The aforesaid *Snellius* makes a *Hollandish* Mile to consist of 1500 *Rhindlandish* *Perches* (every *Perch* being twelve foot long) or to consist of 18000 *Rhindlandish* Feet.

And these two Measures, to wit, the *Perch* and *Mile*, arise from the multiplication and aggregation of Feet. But the Measures that arise from the division of a Foot, are a *digit* or *finger*, a *palm* or *hands breadth*, and a *grain*. A *digit* is the twelfth part of a foot; a *palm* contains four digits; and a *grain* is the fourth part of a digit: but these are seldom used. It is better to divide a foot into ten digits, and then a digit into ten grains.

And these Measures are sufficient for the use of *Geography*: But there are other Measures hereunto to be added (which I have noted in the Schemes) to wit, those of the Ancients, as *Egyptians*, *Greeks*, *Romans*, *Persians*, &c. also those of later times, as of the *Turks*, *Polanders*, *Germans*, *Moscovians*, *Italians*, *Spaniards*, *French*, *English*, &c.

The *Grecian Stadium* or Furlong is judged to be 600 *Greek* feet, which makes 625 *Roman* or *Rhindlandish* feet.

A *German* Mile, of which Geographers allow fifteen to one degree, contains 140000 feet. It is esteemed to be 4000 paces; that is, 32 *stadia* or furlongs. Its proportion to the *Rhindlandish* Mile is as 15 to 19.

The *Italian* or *Roman* Mile is a thousand paces, or eight *stadia*.

A *Geometrical pace* contains five foot.

A *Fathom* is six foot; which is reported by some to have been the *Grecian* Pace.

A *Cubit* is a foot and a half.

Parasange, that is, the *Persian* Mile, is esteemed to have contained 30 *stadia*; but it contained 3000 *Persian* Paces.

Schenus the *Egyptian* Measure containeth, according to *Herodotus*, sixty *stadia*, and according to *Pliny*, forty; but peradventure the size thereof was divers, according to the different places wherein it was used: Also, either *Herodotus's* *stadium* differed from *Pliny's*, or else their Books are faulty.

The *French League* holds proportion to the *Rhindlandish* Mile, as 25 to 19, or else as 60 to 19.

The *Spanish League* holds proportion to the *Rhindlandish* Mile, as 17½ to 19. But because in divers places both of *France* and *Spain*, a different greatness of a League is observed; therefore these things are not altogether certain.

The *English* Mile holds proportion to the *Rhindlandish* Mile, as 55 to 19, or else as 16 to 19. But the *English* have three sorts of Miles, to wit, the greater, of which 27½ are equal to a degree: the mean, of which 50 makes a degree; and the least of which 60 or 55 miles makes a degree.

The *Danish* or *Swedish* Miles, holds proportion to the *Rhindlandish* mile as 10 to 19: But in some places the *Danes* and *Swedes* use the *German* mile.

The *Russian* Mile holds proportion with the *Rhindlandish* mile, as 80 to 19.

The

The *Turkish* Mile or League is thought to be equal with the *Italian* Mile, inasmuch that 60 of them make a *degree*, which is 36000 Paces.

The *Arabian* League formerly was the twentieth part of a *degree*, so that twenty five *Arabian* Leagues did equalize one *degree*; for nineteen *Indian* Miles: But yet the *Arabians* did also use another Measure, in fifty five of which said to be a *degree*.

An hundred *Indian* Miles are judged to be equal to a *degree*; although the *Indians* commonly describe their distances by the Journeys of Days and Hours.

The Inhabitants of the Kingdom of *Cambait* and *Guzerat* use a certain Measure, which they call *Cola*, thirty of which makes a *degree*.

Those of the Country *Sina* or *China* observe three Journey-Measures, which they call *Li*, *Fu*, and *Uchan*. *Li* is the space from whence the voice of a man crying aloud may be heard in a Plain, and in a calm Air, which is thought to be three hundred Geometrical Paces. *Fu* contains *Li* ten times, so that twenty *Fu*'s makes a *degree*, and ten *Fu*'s make an *Uchan*, which they determine one days Journey, which is 30000 Paces.

The Square *Rhindlandish* Mile consists of square feet.

But the account of a square *Rhindlandish* Mile ariseth from multiplying the same mile into it self, and the *Cubick* mile is compleat, if the *Square* mile be multiplied by a *single* mile. The same is to be understood as touching square and *Cubick* feet.

O F



O F

Absolute Geography.

S E C T. II.

Containing the General and Absolute properties of the Whole Earth, in Five Chapters.

C H A P. III.

Concerning the Figure of the Earth.



FIGURE is first the principal of all Properties of the Earth; not only in nobleness, but also excelling the rest in the profit and necessity thereof, forasmuch as without it nothing can be fully and solidly demonstrated or known in Geography; and all things therein following do in a manner depend and proceed from her alone. In the first place therefore it is manifest that our discourse is to be begun at her.

But there have been divers opinions concerning the figure of the Earth, for indeed the Vulgar sort, (that is, men endued with no knowledge in Geography,) do think that the Earth extendeth it self in a vast and broad Plain, whose boundary is a Circular line, but that the Hills and Valleys meet and stop it. *Lactantius* and other Fathers were of this Opinion, who earnestly defended and maintained the Earth to be extended downwards with infinite Roots, and in that manner to have its foundation; this they thought, being moved thereto by certain places of Holy Scripture, either misinterpreted or wrong understood. This Opinion is attributed to the Ancient Philosopher *Heraclitus*: although some men write that he attributed to the Earth the shape of a Boat, or made hollow in the bottom. Furthermore, of these of latter days; *Francis Patric*, no base Philosopher, did stiffly maintain that the Earth is extended on a plain foot. *Peucer* writeth, that *Anaximander* judged the form of the Earth to be like a *Rowling-pin*; but that is not likely, seeing that he both essayed the dimension or measuring the Earth, and was skilful enough in *Astronomy*, according to the manner of that Age; forasmuch as he at *Lacedemon* sat up, and made *Heliotropes*, or *Sun-dials*, in which the top of the finger or

Things to be observed concerning the figure of the Earth.

Lactantius his Opinion of the Earth.

See *Lactantius* in his 3d Book chap. 24.

And *Augustine* in his 16 Book de Civit. Dei, chap. 9.

The Opinions of *Francis Patric*, *Anaximander*, *Leucippus* and Others, concerning the Earth.

See Aristotle
in his 2^d Book
de celo, ch. 13.

Reasons to
prove the
Earth round.

The superficies
of the water
round.

See Scheme.

Things to be
noted.

file of the *Dial* with its *shadow*, did mark out and shew the day of the *Equinoxes* and *Solstices*. *Leucippus* is recorded to have thought the Earth to be shaped in the form of a *Drum*: and there are other men which dare ascribe I know not what fond Opinions to the Ancient *Philosophers*. But the true Opinion maintained by almost all *Philosophers* that were *Mathematicians* was, that the Earth is round like a *Globe* or *Sphere*. But the Arguments, which Authors for the confirmation thereof do use, they propose so obscurely and confusedly, that they cannot compel or convince an obstinate and pertinacious Defender of the contrary Opinion. We therefore, as much as may be, will most clearly set forth those very Opinions, and examine them, that the Readers may have a distinct knowledge thereof.

First, I reject the slighter Reasons or Arguments, which are probable, or rather Sophistical. First, the *Spherick figure* is most capacious; therefore the Earth ought to have such a kind of figure. Secondly, all the parts of the Earth tend to the same Center; therefore all those parts make a round figure. Thirdly, when as in the Creation the Water as yet was confusedly mixed with the Earth, without doubt the Earth was moist and soft; but the figure or shape of Liquid things is round or *spherical*: therefore such also the figure of the Earth remained after the separation of the moist from the dry.

These and the like Arguments being slighted, let us view and consider the stronger and most solid. There is but one Argument of one and the first kind, which is taken *à priori*; but the other two kinds are taken *à posteriori*: to wit, some Arguments are taken from the *Celestial appearances*; some again from them which we either observe in the Earth or in Heaven. As for the first Argument, concluding *à priori*, it is taken from the nature of Water; and this demonstration is wont to be taken either from *Aristotle*, or *Archimedes*. *Aristotle* in his second Book *de Cælo*, chap. 5. hath proposed his Demonstration in these very words: *It shall manifestly appear that the superficies or surface of the Water is round; if we shall take the Supposition, That Water of its own nature makes its confluence always to a hollow place, and that that place is more concavous which is nearer the Center.* Therefore from the Center A let the straight lines A B and A G be drawn, and from B unto G let the line B G be drawn, unto which from A let a perpendicular line A D be drawn into E. It is manifest therefore that the line A D is less than the lines A B and A G (by the 18th of the first Book of *Euclid's Elements Geometrical*;) therefore this place D is more concavous; wherefore the Water shall flow from B and G until the lines A B, A D, A G may be equal: But A E is equal to A B, A G; therefore it must needs be, that the very water should be in these lines which are drawn in the Center (this part of the Demonstration is clearly known: but A E, &c. makes nothing for the Demonstration.) But that line, which toucheth them which are drawn from the Center, is the circumference; therefore the superficies of the Water, which truly is B E G, is round.

This is *Aristotle's* Demonstration, in which, besides the confused and evil composition thereof, these things I observe. First, that it supposeth some Center of the whole *Universe*: Secondly, that it taketh the place more or less bending down in regard of that Center. For he which shall deny the shape or figure of the Earth to be *spherical*, would call these things into question. Yet the first may be sufficiently, concerning the Center of the Universe, proved or corrected: For we must say, that either the Stars are wheeled round about by a *Diurnal motion*, or that the Earth is turned round about its own Center (for this the apparent motion of the Stars forceth and causeth.) If the Stars, then that point about which they are turned, shall be the Center of the Universe; if the Earth, then the middle point of the Earth, or that about which it is turned, shall be taken in the Demonstration for the Central point of *Aristotle*. But the chiefest difficulty lies in the second Supposition, to wit, that the lesser or greater declivity or bending downward, ought to be considered in respect of that Center: For he which would defend the superficies of the Water to be plain and of another figure, he would deny this Supposition, and would say, that the declivity must be considered according to our senses, to wit, in respect of our

Horizontal

Horizontal plain, according to which the Earth with infinite spaces is extended into profundity; or else he would define the declivity in another manner. And thus this demonstration concludeth nothing at all, unless it be granted; that the declivity of the places of the Earth must be taken in respect of that Center, about which the daily apparent motion of the Celestial Bodies is performed: which thing, although it may be true, and all other definitions of declivity, according to which the Water may be moved, may also be confused; yet notwithstanding it can scarce be admitted for a principle, seeing that it in a manner supposes the figure of the Earth to be *Spherical*.

Others therefore prefer *Archimedes* his Demonstration before this of *Aristotle*, which is found in his first Book, concerning those things that are carried in the Water. This indeed is more Artificial than that of *Aristotle*, yet it is oppress'd with the same difficulties, forasmuch as it supposeth the Spherical figure of the Earth, and its Center, in respect of which it taketh the depression of the Water. We will bring hither some Arguments framed from those that are taken from Celestial appearances. First, let us conceive the Meridian line of our place, or of any point of B in the Earth, or a Section of the Earth made in plane, which through the Poles of the World M N, passeth through A B C D: this line is usually called the Latitude of the Earth, and the line which is drawn perpendicular to this is named the Longitude of the Earth, or another plain Parallel to the Celestial Equator, making in the Earth the line E B F C. I say, as well the line A B C D, as the line E B F C in the Earth to be circular. But it is a Geometrical Theorem, If any Superficies according to one dimension be cut through any point, and the section be made in the periphery or circumference of the Circle; then according to the other dimension through the same point the section be made in plain, which is perpendicular to the former plain, and the section again be made in the periphery of the Circle, that superficies is *spherical*.

Therefore, because we have taken the point B in the superficies of the Earth, according to our own pleasure, and have shewed the Section A B C D, and E B F C to be the peripheries of the Circles; therefore by the aforesaid Theorem, we conclude, that the superficies of the Earth is *spherical*, and that the Earth is a *spherical Body*.

Furthermore, that the Section of the Earth, according to the dimension of the Latitude from one Pole to another A B C D is circular, is proved by many Celestial appearances: First, if this line A B C D, any place whatsoever being taken in B, some man go forward towards either Pole M, or towards the Star near it, he observeth by his progresses made equally, that he approacheth equally to the Pole. But this could not be done, unless the line of his Journey B A C D were circular, and it is commodiously shewed by the Artificial Terrestrial Globe. Secondly, because A B C D is the Meridian line, into which when the Sun cometh it is midday to us, and to all People dwelling in this line A B C; experience witnesseth, that the Sun in the line A B C doth perpendicularly hang over any place, to wit in the *Torrid zone*, for example P; and if we take equal spaces equal to B Q, Q P, we shall perceive that the distance of the Sun from the vertex or top of Q, is equal to the excess of the distance of the Sun from the vertex of B, above the distance from the vertical point of Q, which could by no means be accomplished, unless the line B P Q were circular. Thirdly, the same is the reason of all the Stars, which when they come into the Meridian A B C, their distances from the vertices P Q B have the same reason, as the distances P Q, P B, Q P. So when our Mariners sail towards the South, the Stars, which before were not conspicuous, become higher and more manifest to the eye, according to the proportion of their sailing. Fourthly, soif many Stars be taken, and the places of the Earth, through whose Zenith they pass, in one Meridian, you shall perceive that the distances of these places have the same proportion among themselves, as the distances of the points of the Meridian in which those Stars keep their Noon, or full South point. Now, forasmuch as belongeth to the Longitude of the Earth; for example E B F C, that is also circular, and that the Earth hath a *spherical tumor*

D

or

Archimedes his
demonstrations
by some
preferred before
those of
Aristotle.

See Scheme.

The Earth a
spherical
body.

The Section
of the Earth,
according to
the dimension
of the latitude
from one Pole
to another, is
circular.

Of the rising
and setting of
the Stars.

or swelling according to this dimension, is proved by that, because the *Sun* and *Stars* do sooner by a great deal rise to those People which live from us towards the East, than to us; and do also sooner set to them, than to us: But to them that dwell from us Westwards, contrariwise they rise and set later than to us; and indeed according to that proportion of time, which the distances of the *Meridians* of those places have from our *Meridian*. So if two places be taken from ours, to wit, the distance of one *Meridian* towards the East 22½ miles; the distance of the other 450; then we shall find, that in this place the *Sun* riseth two hours sooner than with us; but in the other place it riseth but one hour sooner than in ours. The Argument becomes more clear, if this *Theorem* be proposed of the *Suns* coming to the *Meridians* of divers places. For indeed look what is the account of the distance of places from ours, and the same will be observed the account of times which come in between the arrivings to those *Meridians* and ours, or between the *Arches* of the *Equator* intercepted between their *Meridians* and ours: which is made evident by the *Eclipses*; for these things are shewed by the *Artificial Globe*, if we ascribe a *Spherick form* to the Earth: but other shapes thereto applied are very absurd.

Of the rising
of the Sun.

So now the *Spherical form* hath as well been demonstrated, as touching the *latitude*, as the *longitude* of the Earth.

Other Reasons
to prove the
Earth Spheri-
cal.

Yea, but the *Spherical form* thereof may also be proved by the only *Latitude* of the Earth, for indeed all *divisions* of the Earth which are made according to the *latitude* thereof in divers places, are the *Peripheries* of the places; but they pass through the same point of Heaven, to wit, the *Pole* of Conversion near adjacent to the *Polar Star*. From these two Reasons we may solidly infer and prove, that the figure of the Earth is *spherical*. For it is a *Geometrical Theorem*, which therefore ought to be demonstrated by *Geometricians* thus; if any *solid body* be cut in many *planes*, it matters not how passing through some one point, and all the *sections* or *divisions* be performed in the *superficies* of the *periphery* of the *Circle*, that body is *spherical*.

Other reasons.

Here cometh another Reason, taken from the shadow which the Earth on her averse part to the *Sun* disperfeth to the *Moon*, whereby she suffereth an *Eclipse*: forasmuch as this shadow is *conical*, or like a *spire* of a *Steeple*, as is declared by the obscuration of the *Moon*.

But if we deal rigidly, the Arguments taken from the *spherical roundness* of the Earth, from the viewing and consideration of the Earth, are these following:

Again.

First, from the *sailing round* the Earth; because our men of *Europe* hoisting Sail eight times from *Europe* with a direct Journey to the West and South, even unto the *streights* of *Magellan*; afterwards to the West and North; they returned again from the East into *Europe*, and all those appearances hapned to them which arise from the property of the *Globe*; which surely had not been done, if the Earth had not been round. And certainly, upon the supposition of that figure of the Earth all those *Circumnavigations* were grounded, which therefore had not taken such happy success, if the form had been other-
wise.

Furthermore.

Secondly, when either by *Sea* or *Land* we take our departure from high *Towers* and *Mountains*, then the lower parts thereof are absconded from us, and by degrees more and more, till at last the very tops thereof are quite taken from our sight. In the same manner, when as for a long distance we come to a *Tower* or *Mountain*, first the top presenteth it self to our view, then the inferior parts, till at last through our nearer distance the spot thereof is seen. And this increase of Apparition and Occultation is altogether made according to such a proportion, as the *spherical tumor* or swelling of the Earth is able to make; neither can it be explicated by any other figure. The Diagram will make the Proposition more clear.

Thirdly, because that the measuring the height of *Mountains*, or great *Hills*, which is grounded upon the *hypothesis* of the globous form of the Earth, is found by experience to agree with a real truth of the thing it self.

Further-

Further Rea-
sons to prove
the roundness
of the Earth.

Furthermore, that we may draw together the whole number of these Arguments taken *a posteriori* into one sum, (although they might be handled *Geometrically*, but that business would be of great labour and difficulty; for it must be demonstrated, that this or that different property being put, that the *line* is circular;) therefore a *round spherical figure* is to be assigned to the Earth. Because all the appearances as well *Celestial*, (as the divers elevation of the *Pole*, the divers altitude of the *Sun* of that day in divers Countries, the reason of the *Shadows*, the difference and increase of the Longest days towards the *Pole*, times of the rising and setting of the *Stars*, &c.) as *Terrestrial*, (as the direction of *Navigations*, the appearing and hiding of *Towers* and *Mountains*, the distances of *Places*, the *Ports*, *Coasts*, *Winds*, &c.) are most commodiously declared by that *round or spherical form* or figure: neither can another figure be devised which can perform that, as it is manifest by the consideration of divers figures and forms of *Bodies*. And our *artificial Terrestrial Globe* so justly represents all these things, as they are really found to be in the Earth: which certainly could not be done, if the Earth had any form or figure than that of our *artificial Globe*. And what other form soever you shall chuse, there will follow innumerable absurdities: For it is manifest, that it is not plain by the appearances hither alledged; and that it neither can be hollow is clear from this, that the *Sun* and *Stars* ought first then to appear to the *western People*, than to the *Eastern*, if it were of such a figure; as we see the *Sun* rising first to illuminate the *Valleys*, before it can give light to the averse parts of *Mountains*.

C H A P. IV.

Concerning the Dimension and Magnitude of the Earth.

THE Dimension or measuring of the Earth comprehends three principal Heads: First, the *Longitude* or length of the *Diameter*, or *half Diameter*, that is, of a line from the *Superficies* to the *Center*, as also of a *periphery* of the Earth, or the *Circumference*. Secondly, the *magnitude* of the *Superficies* of the whole Earth. Thirdly, the *solidness* or *corporeal Dimension* of the Earth. But these things are so contrived together, that one of them being known, the other two come to our knowledge by *Geometrical Instruments*, because the Earth is a certain *Sphere*; as it is shewed in the second Chapter. This property is the most noble and hard to know, and hath exercised the most excellent Wits for many Ages: insomuch that some Men have written whole Books concerning this matter. And therefore I have thought, that it would not prove ungrateful to the Students of *Geometry*, if I should fully relate here the History of this Dimension. *Dio- genes Laertius* praiseth *Anaximander* the *Milesian*, the Scholar of *Thales*; that besides other *Astronomical Inventions*, he first of all others described the circuit or *perimeter* of both *Land* and *Sea*. But *Anaximander* lived about the year 550 before the Birth of *Christ*. The *Mathematicians* of succeeding Ages seem to have followed his Dimension, even until *Eratosthenes*, because Authors make mention of none other; and therefore I judge that to be the *Magnitude* assigned by *Anaximander*, which *Aristotle* hath noted in the end of his second Book *de Celo*, saying; The *Mathematicians* also, which endeavour to measure out the *Magnitude* of the World, report that the Earth is bounded in and girt with four hundred *Stadiums*. By this *perimeter*, it is no difficult matter to assign the *half diameter* of the Earth according to *Anaximander*. But because we can find nothing noted concerning *Anaximanders Invention*, besides that one place of *Diogenes Laertius*

The Opinions
of divers Wri-
ters concern-
ing the Dimen-
sion and Mag-
nitude of the
Earth.*Anaximander*
the *Milesian*,
the Scholar of
Thales.*Aristotle*.

Eratosthenes.

The circuit of the Earth.

Eratosthenes.
Strabo.
Cleomedes.

Posidonius.

Cleomedes.
Strabo.Tolom.
Marinus.Maimon King of Arabia
studious in
Geography, in
whose days
it flourished.

Laertius; his and *Eratosthenes* his diligence is obscured, who next after *Anaximander* undertook this business with great applause of all men: he lived about two hundred years before Christ; and as he was most conversant in the rest of the *Mathematicks* and *Dimensions*, so he is esteemed most accurately to have perfected *Geodastia*, or *Surveying*; and this glory is principally ascribed to him. But he discovered and delivered, that the *perimeter* or circuit of the *Earth* is two hundred fifty thousand *Stadiums* or *Furlongs*; but others two hundred fifty two thousand, which *Pliny* reports to make up three hundred fifteen thousand *Roman miles*, every one of which are thought to be a thousand *Paces*.

Eratosthenes had written three Books of *Geography*, which by reason of the injury of time are now not to be found. *Strabo*, the famous *Geographer*, relateth the Contents and Arguments of each Book: and *Cleomedes* hath noted up his manner which *Eratosthenes* used for the discovery of the Circuit of the *Earth*; in which, what can be wanted, we will hereafter declare. For indeed *Eratosthenes* his measuring forth the *Earth*, was by many *Mathematicians*, especially *Hipparchus* (a hundred years after *Eratosthenes*) judged to swerve from the truth; although there is nothing written touching *Eratosthenes* his Dimension or measuring forth the *Earth*, but that he added twenty five thousand *stadiums* to the *perimeter*. But *Posidonius* being not only a most knowing *Astronomer* and *Practitioner*, but also in every part of *Philosophy* most expert, did next after *Eratosthenes* enter upon this Doctrine, a little before the birth of *Christ*, to wit, in the time of *Cicero* and *Pompey*. This man by his Dimensions found the circumference of the *Earth* to be two hundred forty thousand *stadiums*, as *Cleomedes* hath noted; but 180000 *stadiums*, as *Strabo* hath delivered; whereby ariseth a great doubt concerning the cause of this difference between *Cleomedes* and *Strabo* his allowance; seeing this of *Strabo* is the truer, although uttered in a few words: But *Cleomedes* his assignation of the same is far from truth, although he read and expounded *Posidonius* his *Geodesie* to many. Concerning his size or manner, we will speak hereafter.

But the Dimension of *Eratosthenes* was used as yet of many, even to *Ptolomy's* time, (the year 144 after *Christ*) who used a *Perimeter* of 180000 *stadiums*, and affirmed it to be more agreeable to truth, inasmuch that this very Invention was by *Theon* ascribed to him. It is gathered that *Marinus* a famous *Geographer*, and by whose Writings *Ptolomy* was much aided, did attempt something in this business, as appeared by his *Geographical Writings* of the same *Ptolomy*.

After these times, when as the study and prosecution of the *Sciences* by little and little vanished away in *Greece*, nothing was done in this business, neither did the *Romans* undertake any thing herein.

But the *Arabians* and *Saraxons* having obtained the Empire, or glory of other Arts from the *Grecians* to themselves, so likewise they left not this part of the *Mathematicks* untouched. Forasmuch (as *Snellius* relates out of *Abelsfede* an *Arabian Geographer*, who flourished about the year of *Christ* 1300, and whose Writings were printed at *Rome*) about the 800-year of the *Christian Account*, *Maimon King* of the *Arabians*, or the *Calife* of *Babylon*, being studious in the *Mathematicks*, forasmuch as he commanded the great construction of *Ptolomy* to be turned out of *Greek* into the *Arabian Language*, which is called by the *Arabians* the *Almagest* of *Ptolomy*. This *Maimon*, I say, having assembled together certain skilful *Mathematicians*, commanded them that they should search after the *Perimeter* of the *Earth*. To perform which task, they chose the *Fields* of *Mesopotamia*, and they under the same *Meridian* proceeding from the North to South, until the *Elevation* of the *Pole* had decreased one degree, found after an even level, that the space or Journey was fifty six or fifty six and a half; from whence it is found that the *Perimeter* according to them, is twenty thousand and sixty, or twenty thousand three hundred and forty *Miles*.

From

From that time even to our Age no man hath attayed this; but many *Arabians* have used this dimension of their own *Mathematicians*. But the *Latines*, when they began to handle *Astronomy*, used that of 18000 *Stadiums* (which *Ptolomy* had used) which makes 324000 *Italian miles*, or 5400 *German miles*; for 15 *German*, or 60 *Italian miles*, are allotted to one degree, when as there ought to have been assigned thereto 17 and 1/2, because about 38 *Stadiums* are given to one *German mile*; and so the *Perimeter* should be 5625 *German miles*. But about thirty years ago, *Snellius* a famous *Mathematician*, Professor of *Leyden*, observed that usual *Perimeter* of the *Earth*, or the magnitude of one degree defined in 15 *miles*, to depend on no certain demonstration, but to be uncertain; therefore with very great industry he set upon this dimension, and happily finished it, demonstrating the magnitude of one degree in the *Earth* to be 28500 *Paces* or *Poles* (every one of which contain 12 *Rhindlandish feet*, or 19 *Dutch miles*) and the whole *Perimeter* to be 8640 *miles*. But he defines a *mile* with 1500 *Poles*, or 18000 *Rhindlandish feet*. We will now speak concerning the manner of measuring the *Earth*.

But indeed this Invention depends on the Figure of the *Earth*, which in the foregoing Chapter we have proved to be *Spherical*: For indeed we conceive the *Earth* to be cut by a Plain passing through the Center: This Section or Division maketh the greatest Circle of the *Earth*: For a *Sphere* being cut in any manner, the Section is made a Circle; but if it be cut through the Center, it shall be the greatest Circle, and therefore the *Periphery* of this Circle in the Superficies of the *Earth*, shall be the Circumference, Circuit, and *Perimeter* of the *Earth*. And this work of measuring beginneth from the magnitude of this *Periphery*; because therefore this *Periphery* or *Circumference*, as others are, is divided in the mind into three hundred and sixty degrees, (as hath been said in the second Chap.) but indeed we cannot perform the magnitude of the whole *Periphery*, and therefore the Problem is thither reduced, that we may find out the magnitude of one degree, or other part in the known measure. For example; the magnitude of half a degree, the necessity of which also meets in other Problems. And we take the *Periphery* of the *Earth* for the most part to be that of the *Meridian Circle*, because this is more easily, and with less occasion of error, determined by our own place, and by the North or Polar Star, or other means, which we will declare in the Third and twentieth Chapter.

The first mean or way which the *Arabians*, and other *Mathematicians* have used.

Let the *Horizon* therefore of our *Terrestrial Meridian* (which lieth just under the *Celestial* a b c d, and is concentrical thereto) be H h, R s s; let the *Periphery* A B C D, R the Center of the *Earth*; our place B the *Vertex*, or supremest point over our heads; the *Pole* of the *Earth* A lying under the *Celestial*; the *Elevation* of the *Pole* above the *Horizon* shall be A H a h: Let us now take another place in the same *Meridian* A B C D or G, lying under the same a b c d, the *Vertex* g, the *Horizon* f F r t T. Let here now the *Elevation* of the *Pole* be exactly observed in the place B, viz. a h or A H; also of the place G, to wit f a, or F A; and let F A be taken away from H A, and the remainder is H F, to which the *Arch* B G intercepted between the places, is equal. After that the interval or space between B G must be measured accurately in a certain measure. For example; how many *Paces* or *Poles* it may contain, or how many *miles*? For these shall be correspondent to the *Arch* B G. And by the *Golden Rule*, as B G is to A B G ed the 360 degrees; so the space or interval found out; or the *Paces* or *Miles* are to the *Perches* or *Miles* of the whole *Perimeter* A B G C D, or as the *Arch* B G is to one degree; so the *Perches* or *Miles* found are to the *Perches* or *Miles* which are due to one degree.

Note, if your pleasure be not to measure the interval B G thus, but to follow the vulgar determination, then according to that way the quantity must be determined. As for example; that to 1 degree 15 such *miles* answer, as between B G may be 10, &c.

Example:

The dimension of the Earth by the Latins.

Its dimension according to Snellius.

The Circumference of the Sphere divided into 360 degrees.

See Scheme.

Elevation of the Pole at London.

The Elevation of the Pole at Prague.

Eratoſthenes's manner used about the dimension and magnitude of the Earth. See Scheme.

Pofidonius's manner used about the magnitude, &c. of the Earth.

See Scheme.

Example; B London, where the Elevation of the Pole A H, a h, is 51 degrees 32 minutes. Let G be Hartford lying under the same Meridian with London, the Elevation of whose Pole a f, a f, is 51 degrees 34 minutes; therefore f h, or B G is 29 minutes. But the distance between London and Hartford is 20 English miles, or 13875 Rhinlandish Perches of 12 foot: therefore as 29 minutes are to 60 minutes, so 9 $\frac{1}{2}$ to 19 Holland miles: therefore 19 Holland miles make one degree in the circumference of the Earth. Or the interval B G is accounted to be 7 $\frac{1}{2}$ German miles, a German mile being reckoned to be 1900 Rhinlandish Perches: therefore let it be wrought thus; as 29 parts are to 60, so is 7 $\frac{1}{2}$ to 15 such German miles. So at Prague the Elevation of the Pole is 59 degrees and 6 minutes: at Lincium it is 48 degrees, and 16 minutes: the difference of B G shall be one degree and 50 minutes; and it is thought to be distant 26 German miles; therefore the Perimeter was 5105 miles, and the whole Circuit of the Earth is 54000 miles.

The second manner of Eratoſthenes.

Let there again be two places of the Earth in the same Meridian; let B be the City Alexandria in Egypt, let G be Syene, another City of Egypt, under the Tropick of Cancer; let now the same places in one and the same day, in the full southing of the Sun, when he comes into the Meridian line a b c d, the distance from the Vertices b g be observed by a Quadrant. Let at Alexandria in the day of the Solstice, 21 of June g f, or G F be observed, $\frac{1}{2}$ of the Periphery, or 7 degrees 12 minutes: but in Syene let there be no distance, the Sun hangeth perpendicularly over their heads; therefore B G shall be the Arch intercepted between those two places. And because the distance put is 5000 Stadiums, therefore according to the Golden Rule, it shall be, as 7 degrees, 12 parts to one degree, (or as $\frac{1}{16}$ to $\frac{1}{160}$, or as 5 to 36) so 5000 to 694 $\frac{1}{2}$ Stadiums, which are requisite for one degree; or as $\frac{1}{16}$ is to 50, or as 1 to 50, so 5000 to 250000 Stadiums of the whole Periphery A B C D according to this measure. Yet seeing there are divers ways to take the Meridian Altitude of the Sun, and the distance from the Vertical point g b, Eratoſthenes wrought it by a hollow Spherical Scioeterick, or Sundial, which they called Scaphe, where the Style B x sheweth the Vertex q x z, but the Radius or beam of the Sun terminating the shadow of the Style or Pin, marks out B z how much the distance of the Sun o b from the Vertex 7 degrees 12 parts at Alexandria. But in the City Syene, the Style G x makes no shadow that day; because o the Sun hangeth perpendicularly over it, and therefore there is no distance of the Sun then, because therefore the Angle B x z is equal to the Angle b x o, whose measure is B o, or B z: there B o is equal to B z 7 degrees 12 first minutes, or $\frac{1}{16}$ of the Periphery. The other things are performed as it hath been said.

The third manner of Pofidonius.

Let two places B G be under the same Meridian. Pofidonius took B Rhodes, and G the City Alexandria in Egypt: let the Altitude of some Star in these two places, when it cometh into the Meridian, above the Horizon, and that in the same day, or in divers days, which matters not at all. Pofidonius took the shining Star Canopus, which is of the first magnitude in Argonavi; but this Star did not rise above the Horizon of Rhodes h H S, but did only touch the Horizon in S; yet it was elevated above the Horizon of Alexandria F R t in the Arch t S $\frac{1}{16}$ part of the whole Periphery, or 7 degrees 30 minutes. Therefore the distance of the Arch T s, that is B G, shall be 7 degrees 30 minutes unto 1 degree, or as $\frac{1}{16}$ part unto $\frac{1}{160}$; that is, as 1 to 48, so 5000 to 240000 Stadiums of the whole Perimeter of the Earth, according to these Hypotheses of Pofidonius.

The

The fourth manner or way of Snellius.

Because in the former ways we have taken two places B G lying under the same Meridian, and yet the places fit for this business may lie under divers Meridians, therefore we thought it requisite that an example, and that of Snellius, should be also concerning this case here proposed.

Let therefore A B C D be the Meridian of Alcmaria; B Alcmaria it self, the Elevation of the Pole h a 52 degrees 40 $\frac{1}{2}$ minutes; the distance from the Pole B A 37 degrees, 19 minutes, 30 seconds.

Let the other place be P Bergenapfome, the Meridian A P V V the distance from the Pole, that is the Complement of the Elevation (51 degrees, 29 minutes,) A P is 38 degrees, 31 minutes: therefore P G a Perpendicular Line being drawn to A B G, the difference of the distances from the Pole is B G, 71 minutes, 30 seconds, or 1 degree, 11 minutes, 30 seconds.

Moreover, Snellius by a laborious Geodesie or Earth-meeting, found the distance of Alcmaria from Bergen B P, to be 34710 Rhinlandish Perches, and the Angle of Position P B G, to be 11 degrees, 26 minutes, 2 seconds. Therefore in the Triangle Strait angled P B G, the Hypotenuse B P, and the Angle B P G is given; therefore by the Problem of the second Chapter, B G is found 34018 (for which Snellius takes 33930; for he detracts 88 Perches from the Stations of the Elevations of the Pole.) But the Arch B G 71 $\frac{1}{2}$ scruples is the difference of the Elevation of the Pole, therefore as 71 $\frac{1}{2}$ minutes is to 1 degree or 60 minutes, so is 33930 (or 34018) to 28473 Perches for one degree, or according to the round number 28500, or 19 Holland miles. They which understand Spherical Trigonometry, from the given A B, A P, the Angle A B P, may find the Arch B P to be 1 degree, 14 minutes; which when they are equal with 14710 Perches, 1 degree shall be equal to the Perches, or of 18 miles, and $\frac{1}{2}$. But the cause that this number differeth from that of Snellius, is first, that Snellius did not take the very points of the Towers B P, by which he obtained the Angle G B P, for the knowing the Elevations of the Pole; but he took the places a little distant from them: Notwithstanding no man can doubt but the same may be found to be the Altitude of the Pole. The other cause is, that he taketh the Lines B G, B P, P G as Strait, which nevertheless are not Strait, although this discord may seem to make little or no difference of any moment. But let Snellius his quantity of a degree of 28500 Perches be taken (mine of 28300 Perches) his makes 19 $\frac{1}{16}$ miles, (mine 18 $\frac{1}{2}$ miles) the Perimeter or Circuit according to Snellius, shall be 10260000 Perches, 123120000 feet, or 8640 Holland miles.

The fifth manner, being the first Terrestrial way of measuring the Earth.

The three following manners or ways are Terrestrial, performing the work without the Heaven or Meridian Line. Let B P be the Altitude of the Tower; this is to be sought out in a Land-measuring way: then let P s be the distance of the most remote term from whence the Tower may be seen. And although P s be not a Strait Line, yet because it is the least part of the Periphery of the whole Earth, therefore it is taken for a Strait Line; and the Triangle Strait angled B P s, in which by the given B P, P s, the Angle B s P is found, so whom B R s is equal, whose measure is the Arch S P. Therefore as this Arch is to one degree, so P s the found distance, is to the quantity of one degree. As for Example; let B P the Altitude be 480 Paces, and let the distance P s of the point s; which endeth the Sight, be 40000 Paces, or 10 German miles: therefore let it be wrought according to the Problem of the second Chapter. As P s 40000 Paces are to B P 480 Paces, so the whole Sine 10000000 is to 11904, the Tangent of the Angle B S P, or S R P, or of the Arch S P, to wit, 41 minutes; therefore as 41 minutes are to 60 minutes, so 40000 Paces are to 59000 Paces, that is about 15 miles for 1 degree.

Or

Snellius's way about the dimension and magnitude of the Earth.

See Scheme.

See Snellius in page 197.

The first Terrestrial way about the finding out the magnitude, &c. of the Earth.

See Scheme.

Or the *Diameter* P R may be found without the *Table of Sines*, or without the finding the *Perimeter*: For as B P is to P S, so P S is to P R; as 480 is to 40000, so 40000 is to 3333333 *paces* for the half *Diameter* R P.

The sixth manner of measuring the Earth, being the second Terrestrial, without the knowledge of the distance.

But truly the same half *Diameter* R P shall also be concluded in this manner: Let B P be the high Tower, to wit, the *Plummet* being let down from the hole, the height thereof may be found to be 100 *paces*. Or if the height of the Mountain P B be known by another *Geodesie*, or *surveying* 4000 *paces*, afterwards the *Instrument* being applied in the top of B, let the Angle of the last Sight be found P B S, 88 degrees, 37 minutes: Therefore B R S shall be one degree, 23 minutes.

Out of the *Canon of Sines*, let the *Sine* of 88 degrees, 37 minutes, be taken, and let this be subtracted from the whole *Sine* 10000000. And let it be dispatch'd thus: as the remainder is to the *Sine* of 88 degrees, 37 minutes, so B P of 1000 *paces* is to the half *Diameter* S R in *paces*.

The seventh manner, being the third Terrestrial.

This way or manner shall seem more accurate then the former ways, and shall appear more applicable to the practice, taking two mountains or heights, of whom, not the height but the distance may be known, which may be found *Geodetically*, or by the Art of *Surveying*. Let B P be one *Altitude* of the Mountain, Tower, &c. S T the other height; let T P be the distance of five *German miles*; let the Angle B T R 89 degrees, 55 minutes, be found by the *Instrument*, and in the other Mountain T B R 89 degrees, 55 minutes. The Angle P R S shall be 920 minutes (because the three Angles T, B, R, are equated to two strait Angles, 180 degrees) wherefore according to the *Golden Rule*, Work, as 20 degrees are to 60 degrees; so 5 miles to 15 miles for 1 degree.

These are the principal manners and ways of measuring the Earth: For by the found out measure of 1 degree, the whole *Perimeter*, *Diameter*, *superficies* and *Solidity* is found out.

Because according to *Snellius*, the *Perimeter* is 8640 *Holland miles*, or 10260000 *Rhindlandish Perches*, or 123120000 *feet*: therefore by the *Problem* of the second Chapter, the *Perimeter* of the Earth is found to be 10884 *miles*, or 1633190 *Perches*, or 19598300 *feet*. The *Superficies* of the Earth 18811353 *square Holland miles*.

And the whole *Solidity* is 40956821512 *Cubick miles*.

But because the calculation by *German miles* is more usual, 15 of which makes 1 degree, therefore these may be used, but upon this condition, that such miles may be understood, of which 15 may make 19 *Holland miles*, or that 1 mile may contain 1900 *Rhindlandish Perches*.

Therefore the *Periphery* of the Earth shall be 5400 such miles, the half *Diameter* 860, the *Superficies* 9278181 *square miles*, the *Solidity* shall be 265693384 *Cubick miles*.

Yet the *Italian miles* are the most commodious, 60 of which are allowed to 1 degree; for so 1 mile fittingly answereth one minute of a degree. But such an *Italian mile* ought to be understood, which may contain 475 *Rhindlandish Perches*; so the *Circuit* of the Earth shall be 21600 such miles, the half *Diameter* 3440 *miles*. These things being thus expounded, we must alledge and bring hither the causes why the fore-rehearsed dimensions or measurements of Authors may so differ, and what is wanting in every one of them.

In the first manner of dimensions these things occur; First, That an Error may be committed in taking the elevation of the Pole. Secondly, that a doubt may be made concerning places under the same *Meridian*. Thirdly, that the distance may not be declared distinctly: And because the *Arabians* used this manner,

The second terrestrial way for the measuring the Earth.

The third terrestrial way for the measuring the magnitude of the Earth.

See Scheme.

The calculation of German miles usual.

The Italian miles most commodious.

Reasons shewing errors in the differing of the dimensions of the Earth according to the *Arabians*, and others, Mathematicians.

manner, therefore the things that are desired in their dimension, are these: First, the exact quantity or greatness of their miles, (which according to *Alfraganus* is 4000 *Cubits*) as unknown to us. Secondly, the *Arabians* have not shewed to us the places, whose *Elevations* they took, and therefore we cannot make further search concerning their diligence. Thirdly, neither did they demonstrate their manner by which they measured.

In *Eratosthenes's* dimension these things deserve correction. First, that to the Arch found B Z of 7 degrees, 12 minutes, he did not add 15 minutes, for the Arch intercepted between the *Radius Solis* X Z, which was to be taken. Secondly, that he did not prove *Syene* and *Alexandria* to lye under the same *Meridian*. Thirdly, that the term of the *Shadows* cannot be exactly noted; and besides, that the places about *Syene*, even to 150 *Stadiums*, have this property, that the *Style* is without a shadow. Fourthly, that he took the distance between *Syene* and *Alexandria*, according to the opinion of the *Vulgar* sort, which neglecteth, and hath no care of exactness; neither can the magnitude of the *stadiums* be certainly manifest unto us.

In *Pofidonius* his manner these blemishes are judged to be; First, that he thought *Canobus* was not lifted up above the *Horizon* of *Rhodes*, whereas notwithstanding it may be elevated 2 degrees above it. Surely he could not know, that it exactly touched it. Secondly, that he determined the distance between *Rhodes* and *Alexandria* by conjectures and common journeys. Thirdly, that his *stadia*, or measure of a *stadium*, is not sufficiently determinate. Fourthly, because it may be doubtful whether *Alexandria* and *Rhodes* lye under the same *Meridian*, &c.

In the *Terrestrial* manner of measuring the Earth, there is this defect: First, that in the exact measuring of Hills, a fault may easily be committed. Secondly, the furthestmost point of the Sight cannot be known accurately, both because of the refractions, as also for the weakness of the eyes.

It may suffice to have spoken thus much concerning the greatest Circuit of the Earth, its half *Diameter*, *Superficies*, and *Solidity*. We might, if it were a similar Body, by the *Solidity* of the Earth, judge of its weight: but because parts of a different weight, whose proportion is hidden from us, are in it; therefore its weight cannot, but by a conceived supposition, be determined.

It is worthy observation, that the half *Diameter* of the Earth is the measure of all *Celestial dimensions*, as well in assigning the distances of the *Planets* from the Earth, and from themselves, as in numbring and computing their magnitude. So we say that the *Sun* is distant from the Earth about 1200 half *Diameters*, the *Moon* 40, &c.

But seeing in *Geography* we do not only consider the great Circles of the Earth, as the *Equator*, &c. but also the *Parallels* of the *Equator*. Therefore we must likewise determine how many miles or *perches* answer one degree in every *Parallel*. We have taken the accounting of the *Perches* out of *Snellius*, but I my self have reckoned up the miles; to wit, 1900 *Perches* for a *German mile*; 1500 for a *Belgick* or *Holland mile*: 475 for an *Italian mile*.

The half Diameter of the Earth is the measure of all Celestial dimensions. The distance of the Sun and Moon from the Earth.

A TABLE of the Quantity of one Degree in every Parallel.

The Degrees in which the Parallels are distant from the Equator, or the Elevation of the Poles of the Parallels.

Equator of one degree	Perch of one degree	Holland miles.	German miles.	Italian miles.	The Latitude	Of a Perch of one degree	Holland miles.	German miles.	Italian miles.
mil.	per.	mil.	per.	mil.	deg.	mil.	per.	mil.	per.
1	28500	19	0	15	0	60	0	0	0
2	28496	18	1496	14	59	59	56	46	19798
3	28483	18	1483	14	59	59	55	47	19437
4	8461	18	1461	14	58	59	52	48	19070
5	28431	18	1431	14	57	59	50	49	18698
6	28392	18	1392	14	56	59	46	50	18319
7	28344	18	1344	14	55	59	40	51	17936
8	28288	18	1288	14	53	59	37	52	17546
9	28223	18	1223	14	51	59	24	53	17152
10	28149	18	1149	14	48	59	12	54	16752
11	28067	18	1067	14	46	59	4	55	16347
12	27976	18	976	14	41	58	52	56	15932
13	27877	18	877	14	40	58	40	57	15522
14	27769	18	769	14	37	58	28	58	15103
15	27653	18	653	14	33	58	12	59	14671
16	27529	18	529	14	29	58	0	60	14250
17	27397	18	453	14	25	57	40	61	13817
18	27255	18	355	14	21	57	20	62	13380
19	27105	18	255	14	16	57	4	63	12939
20	26947	18	155	14	11	56	44	64	12494
21	26781	18	55	14	6	56	24	65	12045
22	26607	17	1107	13	56	55	36	66	11592
23	26423	17	925	13	54	55	12	67	11136
24	26234	17	734	13	48	55	12	68	10676
25	26036	17	536	13	42	54	48	69	10213
26	25830	17	330	13	36	54	24	70	9748
27	25616	17	116	13	29	54	0	71	9279
28	25394	16	1394	13	22	53	28	72	8807
29	25164	16	1164	13	15	53	0	73	8333
30	24927	16	927	13	7	52	28	74	7846
31	24681	16	681	13	59	51	56	75	7376
32	24429	16	429	12	51	51	24	76	6895
33	24169	16	169	12	43	50	52	77	6411
34	23902	15	1402	12	35	50	20	78	5925
35	23628	15	1128	12	26	49	44	79	5438
36	23346	15	846	12	17	49	8	80	4949
37	23057	15	557	12	8	48	32	81	4458
38	22761	15	261	11	59	47	56	82	3966
39	22458	15	0	11	49	47	16	83	3473
40	22149	14	1149	11	39	46	36	84	2979
41	21832	14	832	11	29	46	0	85	2484
42	21509	14	509	11	19	45	16	86	1988
43	21180	14	180	11	9	44	36	87	1492
44	20843	13	1343	10	58	43	52	88	995
45	20501	13	1001	10	47	43	8	89	497
46	20152	13	652	10	36	42	24	90	0

CHAP.

CHAP. V.

THE *Pythagorical motion*, or turning the *Earth* about, as with a wheel (not that quaking and shaking) is the cause of very many *Celestial appearances* according to the *Copernicans* opinion, seeing that without it every place would have a perpetual constancy of these. But indeed there is no property or quality of the *Earth*, concerning which there can be greater disputes, fith that not very long ago it hath suffered the Censure of the *Church of Rome*. Yet because to many men it seemeth likely to be true, that such a motion of the *Earth* may be given, therefore I will endeavour briefly to unfold the same.

It is not unknown to any of the very Vulgar sort, that the *Sun*, *Moon*, and all the *Stars of Heaven* appear every day, that is, in the space of 24 hours to be moved from East to West, and commonly to return to the same places of *Heaven*. It must therefore needs be that either they are really moved, or that we are moved, and that our motion or moving be imputed to the *Stars*: For if two things change their distance, one of them at least was moved; which principle is most manifest.

That the *Earth* standeth still, and that the *Stars* with the *Heavens* are moved, was, and is yet, the common opinion of *Astronomers*, which are called *Ptolomaians*, or of such as follow the Doctrine of *Ptolomy*; yet the *Pythagoreans* long ago maintained that the *Stars* held their place constantly without budging from thence, and that the *Earth* was rouled and wheeled about its Center; one of whom was the famous *Aristarchus* of *Samos*, who for his defending this Opinion, was by his Adversary accused of prophaning and violating *Religion*, before the most famous and severe *Bench* of the *Areopagites*, but he was nevertheless quitted by the sentence of those most sincere Judges. Yet this Opinion found but few Abettors, inasmuch that many Ages it was as it were buried in oblivion: so that there was no mention in *Schools* made thereof, until such time that eminent *Astronomer Copernicus*, some two or three Ages past made it famous, and so prevailed therein, that very many excellent *Astronomers* imbraced this Opinion, and confirmed it with sundry Arguments and Reasons; among whom not long since flourished *Kepler* the Emperour's profest *Mathematician*, and *Galileus* the *Italian Mathematician* to the grand Duke of *Tuscany* or *Florence*, and *Laurebergius* *Belga*. And because there is a twofold motion of the heavenly Bodies perceived by us; the first whereof is, whereby all the *Stars*, as well fixed, as *Planets*, seem with equal time, to wit, in 24 hours to be carried round about the *Earth*, and to rise, and keep their southing and setting: The second motion is, that which is called proper, whereby the *Planets* are observed with a different or diverse motion, as also are the fixed *Stars* to be carried from West to East. The *Ptolomaians* affirm that both these motions are in the *Stars* themselves, or their Orbs: But the *Copernicans* ascribe that first motion not to the carrying about of the *Earth* only from one place to another, but to the wheeling and turning about of it remaining in her own place, about her own *Axle*, from West to East, (such as is seen to be implanted in all the *Stars*;) yet they acquit the fixed *Stars*, as also the *Sun* from the aforesaid second motion, and attribute the apparent motion of these to the carrying of the *Earth* about the *Sun*, and to the inclination of the *Axle*, notwithstanding they leave the said second motion to the rest of the *Planets*. Forsooth they deny the *Sun* to be a *Planet*, but place the *Earth* in his stead: and they prefer the *Sun* into the *Ptolomaians* place of the *Earth*, to wit, the Center of the whole World, soasmuch as that is the cause which maketh the *Earth*, *Saturn*, *Jupiter*, *Mars*, *Venus*, and *Mercury* to turn round about.

These are the Reasons of this Opinion.

Of the great number of the Stars which seem to perform their circuit in 24 hours.

Of the swift motion of the Stars, &c.

The vastness of the Celestial Bodies compared with the body of the Earth.

Of the solidity of the Celestial Orbs according to Tycho Brahe.

No reason for the motion of the Stars about the Earth.

Of the Pole and Axil.

The sayling of Ships from West to East, more easie, than from East to West.

From the moving of the Earth, the Celestial appearances, &c. may be declared.

1. Because so great is the number of the Stars which seem to perform their Circuit in 24 hours about the Earth, and this appearance may be declared by the motion of the Earth, only remaining in her place; therefore it is more agreeable to reason to determine this motion, rather than that; inasmuch as when we sit in a Ship, and sayling nearer to a Station or Harbour of many Ships, which in the mean while seem as it were to approach or sayl to us, yet we do not ascribe a motion or sayling to them. And seeing nature doth in no case work by many things, that which she can perform with a few; it is likely in this business also that that is so observed and kept by her.

2. Because the swiftnes of that motion of the Stars would be incredible, and such as would surpass all our imagination: for seeing that they are distant from the Earth almost an infinite space, and that most vast circuit ought to be run in one minute of an hour; at least, that they should be carried through 100000 miles. Contrariwise, if this motion should be ascribed to the Earth, she remains still in her place, neither need we to fear the least swiftnes, because she is turned about her own Axil as a Wheel.

3. There accrues a greater force to this Argument, if we compare the huge vastness of the Celestial Bodies with the Body of the Earth: for seeing that the Sun at least is 200 times bigger then the Earth; but the fixed Stars are in a manner 1000 times bigger; to what man can it not be made more probable, that the Earth is turned about its own Axil by a natural motion, than that so huge Celestial Bodies should be moved from place to place?

4. Because all the most famous Astronomers being compelled with Tycho Brahe by the appearances of the Stars, &c. do now deny that the Celestial Orbs are solid and hard, which appearances the ancients used for proving the more easie supposition of the motion of the Stars; therefore the carrying or wheeling of them about the Earth, seemeth more incredible. Yea, they deny the Orbs to be solid, because if these were so, a mutual penetration of the Orbs must needs be granted, seeing that some Planets are found frequently in the Sphere of some other.

5. No reason can be given why the Stars can be moved about the Earth, when as contrariwise there may some reason be given, why the Earth and the rest of the Planets may be moved about the Sun.

6. Neither is the Pole nor Axil real, about which the Stars are determined to be moved: contrariwise in the Earth there is both Pole and Axil.

7. Because the sayling of Ships from West to East is more easie, than from East to West: For out of Europe into the Indies they sayl in about four months; when as in their return home it is about six months. And this is because in their Voyage thither they are carried or moved into the same point with the Earth; but in their return they are moved or carried into the contrary.

8. Because all the Celestial appearances, the rising and setting of the Stars, the increase or lengthning of the days, &c. may be evidently declared, if we maintain the Earth to be moved: But most especially the commodiousness and necessity of this Hypothesis is seen in those admirable properties of the Planets, to explicate which the Ptolomaicks are compelled to invent many Circles, Epicycles, and Eccentricicks without any reason: But the Copernicans do so derive them from the second motion of the Earth about the Sun with easie labour, inasmuch that thereby they can make the cause of them manifest, and so easie, that the very unlearned may understand them; to wit, first, why the Planets may seem sometimes to be retrograde or go backwards, and indeed Saturn oftner and longer than Jupiter, Jupiter than Mars, &c. sometimes to be carried with a swifter motion, and sometimes to be stationary. 2ly, Why Venus and Mercury can never the whole night long be seen. 3ly, Why Venus can never depart any greater distance from the Sun than 60 degrees, but Mercury no greater

greater then thirty degrees, and therefore those two Planets can never be seen to be opposite to the Sun. Fourthly, why Venus in the evening of the same day after the Sun and in the morning before the Sun, may be seen.

I forbear to bring hither any more appearances; but they are the principal, from which I think an Argument of greatest moment may be fetcht for this Motion of the Earth; when as by this Motion of the Earth they may be so commodiously declared, that it should rather be admired, if the Earth could not be moved by such evident appearances.

These are the easer Arguments by which the Copernicans would evince the motion of the Earth, which although they be not demonstrative; yet they make this Hypothesis more probable; than that which determines the Heaven to be moved: for one of them must needs be admitted.

But these Reasons which some men (to wit, the Ptolomaicks) alledge to the contrary, are easily dissolved; which are these: First, that the Earth is unfitting for motions by reason of its ponderosity. Secondly, that the parts of the Earth are naturally moved with a strait motion to the Center; therefore a circular motion is contrary to the nature thereof. Thirdly, if the Earth should be moved, a stone cast down from a Tower could not fall to the foot thereof. Fourthly, a bullet shot out of a piece of Ordnance towards the East, at some mark, it could not come home to it or hit it, if the mark with the whole Earth were moved towards the East, or at least the hitting the mark should be more swift, than if the bullet were shot towards the East. Fifthly, neither the Towers nor buildings could stand stedfast, but would fall by reason of that motion of the Earth; neither could men be without giddiness, by reason of the whirling about of the Earth. Sixthly, because we see that the Stars change their place, but not the Earth. Seventhly, because the Earth is in the Center of the World, but the Center is not moved. Eighthly, because the holy Scriptures do confirm the stability or stedfastness of the Earth.

Yet indeed the Copernicans to these Arguments use to answer after this manner. To the first they Answer, denying the whole Earth to be heavy; for ponderosity is a tendency of the parts to their whole homogeneous (of the same kind) and such a heaviness is also discovered in the parts of the Sun and Moon, and yet notwithstanding neither the Sun nor Moon is said to be heavy.

To the second they Answer, That that right motion of the parts of the Earth, not of the whole Earth, and the circular motion thereof, doth not hinder the strait carrying of those parts, which is evidenced by the parts of the Sun and Moon.

To the third Argument they reply in a threefold manner: First, that such heavy things are not primarily carried to the Center of the Earth, and therefore are born by a very short line to the superficies thereof; as Iron tendeth not to the Center of the Loadstone, but to the Loadstone. Secondly, the whole Air cleaveth to the Earth, and is moved together with her; therefore all such heavy things being thrown together downwards, get this circular motion; and are moved as it were in a Vessel. And Thirdly, Gassendus by frequent experience hath demonstrated, that if any thing be cast from a moved body, that which is so cast is also moved with that motion of the moved body; as for example, a stone thrown down from the top of the Mast of a Ship moved most swiftly; is nevertheless not left by the Ship, but falls down to the foot of the Mast; and from the foot of the Mast a bullet being shot perpendicularly out of a hand Gun, falleth again perpendicularly; therefore the alledged Objection is nothing worth.

To the fourth Reason, they answer in the same manner as unto the third.

To the fifth they say, That some such thing hath no place, because the motion is equal, neither doth it dash against another body; and the buildings as it were heavy bodies and homogeneous, or of like to the Earth, are moved as

The Reasons of the moving of the Earth, as the Ptolomaicks ans.

The aforesaid Reasons of the Ptolomaicks answered by the Copernicans.

The Opinion of Gassendus therein.

in a *Ship*; for we find in a *Ship* moved very swiftly, or slowly, the *bodies* let upright therein are not overthrown; yea *Cups* and *pots* full of *Wine*, or other liquor, shed nothing thereof at all.

To the *sixth* we say, That the change of the *Stars* place is not perceived, but we find the change of their situation in respect of our selves; but this mutation of position may be observed and be, whether we be moved with the *Earth*, or the *Stars* be moved, we being steadfast, or also both we and the *Stars*.

In the *seventh* Objection, both the *major* and *minor* proposition is false, or at least doubtful.

To the *eighth* they reply, First, that the *holy Scripture* in *physical* or *natural* things doth speak according to appearances and the capacity of the *Vulgar*; for example, when the *Moon* with the *Sun* is called a *great light*, because it was created to give light to the *Night*, whereas indeed the *Moon* is not great in respect of the *Stars* and *Earth*, neither hath she any light of her own proper nature, nor doth she give light in all *Nights* to the *Earth*. So the *Scripture* saith, that the *Sun* goeth to the extreamest part of the *Earth*, and that he returneth to that end again, when as notwithstanding there is no such end or furthestmost part. So in the book of *Job*, a plane and square figure is attributed to the *Earth*, under whom *Pillars* are set, upon which it leaneth; which indeed must not at all be so understood, as the very *Vulgar* will know. There might more places be alledged hither; but these are sufficient: For the *holy Scriptures* were not given to us, thereby to play the *Philosophers*, but to practice *Piety*. Secondly, certain places of *Scripture* are wont to be alledged, which speak not concerning the immobility thereof, but concerning its constancy and durance, as that place which we have brought further out of *Job*.

Thus have we briefly declared of what sort the motion may be, which the *Copernicans* ascribe to the *Earth*, of which a more exquisite explication is usually given in *Astronomy*. But that being supposed, all those things are to be applied to the *Earth*, which are wont to be considered in a *Globe* turned round about, to wit, the *Axle* about which it is turned is one of the *Diameters*: the *Poles* are the *extremities* or two *points*, which are not moved: the greater circle or *periphery*, according to which the circumrotation or wheeling about is made, and its *parallels*. Now let us see concerning the swiftness of that motion. The first motion by which the *Earth* is turned round about his *Axle*, cannot be seen and considered in the whole *Earth* at once, but in divers places it is also different, to wit, how much the nearer the place is to the *Equator*, with so much the greater swiftness and space it is moved; but the greatest motion is in the places that lie in the *Equator*. For indeed, because every place of the *Earth* in twenty four hours, is rouled about by the space of a whole *periphery*, to wit, by 360 degrees; therefore the space of one hour is found. If 360 be divided by 24, the quotient is fifteen, which are so many degrees. These are the degrees, by which the place lying in the *Equator*, or without it, is turned about in one hour; but they make, if the place lye in the *Equator*, two hundred twenty five *German miles*, whence she will be turned in four minutes of an hour through one degree, that is fifteen Miles.

But the places lying without the *Equator* towards either of the *Poles*, are in the space of the same hour wheeled about by so many degrees, but such as are much less; for looth the reason is the same between the swiftness of the motion and the distance of two places, as is between the signs of the *Arches* by which those places are distant from the *Pole*: for example, the distance of *Amsterdam* from the *Equator*, or the elevation of the *Pole*, is 52 degrees, 23 minutes. So the distance from the *Pole* is 37 degrees, 37 minutes, whose sign is 61037. Let us take one place to be in the *Equator*, whose distance from the *Pole* is 90 degrees, his sign is 100000. But the place under the *Equator* in four minutes is carried through 15 miles, and in an hour is carried through 225 miles. Wherefore by the Rule of Three, as 100000 are to 61037,

so fifteen to nine miles, or as 225 to 135 miles; therefore *Amsterdam* every hour by this motion is carried through 135 miles.

But the discovery of this is much easier by the *Table*, which we have set in the end of the foregoing Chapter: For the division of 360 degrees being made by twenty four hours, we find that any place every hour is moved through fifteen degrees of his own Circle, and therefore that it is moved through one degree in four minutes. If we therefore enter that *Table* with the Elevation of the *Pole*, or distance from the *Equator* of that place proposed, we shall find the miles set down at the degrees of the given Elevation, which are due to the motion of the place proposed in the space of four minutes; for example, At *Stockholme* the elevation of the *Pole* is about 60 degrees, and in the *Table* at the degree 60, I find seven miles to answer with one degree; therefore I say, that *Stockholme* is moved about in four minutes by so many miles.

So great is the first motion considered in the places of the *Earth*; but the second motion is of the whole *Earth* from place to place, and all the parts or places thereof are moved with an equal swiftness, and by equal peripheries. The quantity hereof dependeth of the distance of the *Earth* from the *Sun*, and is performed in a whole years space, and thereby the *Earth* every day moveth through about one degree.

Concerning the third motion of the *Earth*, because it hath a more hard consideration, I leave it to be treated of by *Astronomers*, because in *Astronomy* there is a necessity of supposing it. Indeed *Origanus* hath raised a Controversie concerning the second motion also, thinking the first motion to be convenient for the *Earth*, but that the second should be left for the *Sun* and fixed *Stars*; but the *Phænomena*s or appearances in the motions of the *Planets*, which we have alledged before, do sufficiently enough maintain the Motion of the *Earth*.

CHAP. VI.

Concerning the situation or place of the *Earth*, in respect of the *Planets* and *Stars*.

The consideration of the *Earths* situation in this whole systeme of the *World* in respect of other *Planets*, hath a contemplation suitable to that which we have alledged concerning the Motion of the *Earth* in the foregoing Chapter: For the common Opinion of *Philosophers* and *Astronomers*, according to *Ptolomy*, hath decreed, that the *Earth* takes up the Center of this whole Universe, so that she is conversant in the middle of all the *Stars* and *Planets*. But they of *Copernicus* his Sect, with the ancient *Pythagoreans*, place the *Sun* in the Center of all the *Stars*; but they set the *Earth* as it were a *Planet* between *Mars* and *Venus*, and they think that she is carried there about the *Sun* with a yearly course or space, which is understood better by the *Diagram* or description thereof. Yet notwithstanding therein do these two differing Opinions agree, that both confess, that the Center of that first motion; whereby the *Stars* seem to us in the space of twenty four hours to be carried about, is in the *Earth*. For both *Astronomy* and *Geography* do want this Supposition, inasmuch that whether you follow the *Ptolomaican* or *Pythagorean* Opinion, the firmness and certainty of *General Astronomy* and *Geography* loseth nothing: For the difference of Opinions consisteth in this, that the *Ptolomaicans* will have this motion to be in the *Stars* themselves; but the *Pythagoreans* is to be the *Earth*, the *Stars* in the mean while resting, and never moving; neither of which is it necessary either for common *Astronomy* or *Geography* to determine.

According

The Elevation of the Pole at *Stockholme*.

The second motion of the whole *Earth*, which is moved with an equal swiftness, and by equal peripheries.

The *Earth* according to the Opinion of the *Philosophers* and *Astronomers*, takes up the Center of the Universe. The *Sun* according to the *Copernicans*, the Center of the Universe.

See Scheme.

Of the Moon.

Of the Sun.

Of the Axle, Poles, Periphery, Parallels, &c. of the Globe.

Of the motion of the *Earth*; its difference, swiftness, &c.

The distance of *Amsterdam* from the *Equator*, or the Elevation of the *Pole*.

The placing of the Sun, Earth, and other Planets, according to the Ptolemaians and Copernicans.

According to the *Ptolemaians* this is the placing of the Planets to the Earth and fixed Stars; The Earth, Moon, Mercury, Venus, Sun, Jupiter, Saturn and the fixed Stars.

According to the *Copernicans*, such is the situation or placing; The Sun is placed in the middle of the confistence or systeme of the World, as the heart, or fire; next to him the Orb of Mercury, Venus, the Earth, Mars, Jupiter, Saturn, and the fixed Stars.

If you demand, how much the Earth, and we being on the Earth, are distant from the Planets, you must know that the distance is not always the same, but is changed every day, and therefore Astronomers do reckon up three degrees of distances, viz. the least, the mean, and the greatest. The mean distance of the Earth from the rest of the Planets, is according to many Astronomers this following:

The mean distance of the Earth from the other Planets.

The Earth is distant from the Moon with its sixty half Diameters. From Mercury, 110. From Venus, seven hundred. From the Sun, 1150. From Mars, about five thousand. From Jupiter, about 11000. And from Saturn, 18000.

But yet indeed the distance of Mars, Jupiter, Saturn, and the fixed Stars, is altogether uncertain, by reason of the defect of the *parallax* or *mutual changing*. In the *Copernicans Hypothesis* the distance is varied not only from the motion of the Planets, but also from the motion of the Earth it self.

The Reasons of either Opinion, to wit, of the *Ptolemean* and *Copernican*, concerning the place of the Earth, are almost the same with them, which in the precedent Chapter we have alledged: for this disputation hath great affinity with the same. For if you ascribe and allow the second motion to the Sun, which is called the proper motion; not the Sun, but the Earth shall be in the midst; but if you allow that second Motion to the Earth; not the Earth, but the Sun shall be in the middle. These Arguments following may be said for the *Copernicans* Opinion.

The Sun not only the fountain of Light, but also the vital Spirit of the whole Universe.

1. The Sun is not only the Fountain of Light, which as a most clear shining torch illuminates the Earth, Moon, Venus, and without doubt the rest of the Planets; but he is the fire-heart of heat and vital spirit, by which this whole Universe seemeth to be cherished and sustained. Therefore it is probable that he holdeth the middle place, and that these are moved round about him.

2. It is more likely that the Earth should be moved about the Sun, that together with the rest of the Planets, she may receive light and heat from him.

The Sun a vast body, &c.

3. The Sun being placed in the midst, some cause is rendred why the rest of the Planets and the Earth may be carried round about him, to wit, because the Sun is a most vast body, and endowed with great virtues and forces, therefore he rowleth and stirreth up the rest of the Planets to their motion. And this Reason especially taketh place, if we admit *Keplers Hypothesis* concerning the motion of the Planets.

Spots in the Sun.

4. The Observations of *Galileus* and *Scheiner*, concerning the spots in the Sun, prove, that the Sun is moved about his Axil. In the same manner therefore the rest of the Planets have their cause of going about, neither seems it consistent with reason, that any other should be attributed to him.

5. If we allow the Earth a place between Mars and Venus, and allow the Center to the Sun; the motion of every Planet fittingly answers and agrees to the distance from the Center, which in the *Ptolemaick* Supposition is manifest not to be effected, by the consideration of the motions of the Sun, Venus, and Mercury.

6. Those Celestial appearances, which we have used in the former Chapter, for the proving the second Motion of the Earth, are also valid and efficacious for this place, which I have said must be assigned to the Earth, to wit, the Retrograde course and station of the Planets, and the admirable apparent motions

motions of Venus and Mercury, &c. For indeed that second motion of the Earth, doth before hand suppose this place; and placing of the Earth, or hath it joynd to it self very nearly: But this Argument in my Opinion is the chiefest. Yet for the first motion of the Earth nothing can be fetcht by way of Argument, for gathering thence the situation of the Earth. For the Earth might be in the Center of the World, if she were without, or wanted the second motion, as *Origanus* also determines.

7. So also the variation of the distance of the Planets from the Earth, is well declared. Yet notwithstanding the *Aristotelians* and *Platonists* oppugn the *Pythagoreans* Opinion with many Arguments, and endeavour to challenge the Center of the Earth for a place, by these Arguments. First, heavy things are carried to the Center of the World; but the Earth is the heaviest body, therefore it takes up that Center. Secondly, heavy things would go from the Earth towards the Center of the Universe, unless this Center were in the Earth. Thirdly, the Center is the ignoblest place, and the Earth also is the vilest part of this Universe: therefore it shall have the Center thereof. Fourthly, if the Earth were without the Center of the World; and motion of the Stars, then the Stars and Constellations would be seen in some seasons of the year, and some days, bigger than in others. Fifthly, neither would the middle part of Heaven always be conspicuous, as Taurus rising, the Scorpion should set, &c. Sixthly, neither would there be Equinoxes. Seventhly, neither the Moon rising eclipsed, would the Sun set, &c. Eightly, neither would the number of Miles in the Earth equally answer every degree in Heaven.

The Aristotelians and Platonists Arguments about the Earth.

The *Copernicans* do easily weaken these Reasons of the *Aristotelians*. For the first and second is refell'd, because the motion of heavy things is not to the Center of the Universe, but to the homogeneous body, as is proved by the parts of the Moon, the Sun, and Loadstone. The third Reason taketh a false major and minor proposition: For the Center is also a noble place, and the Earth is not ignoble or base.

The aforesaid Reasons of the Aristotelians, refuted by the Copernicans.

The other Reasons are easily disproved by Diagrams or Descriptions, this at least being fore-supposed, that the distance of the Earth from the Sun or Center, how great soever it be; yet if it be compared with the distance of the fixed Stars from the Sun, it would be so little, as that it would have no proportion to it.

Moreover, the Explication of the Theorem belongeth to this place, that the distance of the fixed Stars and superiour Planets, Mars, Jupiter, and Saturn, is so great from the Earth, that the half Diameter of the Earth hath no proportion to it; but the distance of the Moon, Venus, and Mercury, is not so great: touching the Sun there is as yet a doubt; surely, if there be any proportion of the half Diameter of the Earth, to the distance of the Earth from the Sun; that will be very small.

The distance of the Moon, Venus, and Mercury from the Earth, not so great, as of Mars, Jupiter, and Saturn.

But the Theorem is proved thus; First, the fixed Stars and higher Planets appear to us to rise at the same moment, at which they would appear to rise by a right contrived supputation and calculation, if we were set in the Center of the Earth: Therefore the distance of our place from the Center of the Earth, that is, the half Diameter bears no proportion to the distance of the fixed Stars. Secondly, if we take the Meridian or Altitude of a fixed Star, or one of the superiour Planets, with an Astronomical Instrument, we find the same, as if we had observed it in the Center of the Earth: Therefore the semidiameter of the Earth vanisheth away in respect of that distance. Thirdly, if there were any proportion, then the distance of two Stars would be found to be lesser about the Horizon, than about the Meridian, because in this position they are nearer to the Earth almost by one semidiameter of the Earth.

The same Argument is valid as touching the Sun also; for his Diameter is not found greater in the Meridian, than when he is yet on the Horizon.

F

But

But the *Diameter* of the *Moon* is observed to be a little greater, in the *Meridian*, than when, as yet she is on the *Horizon*; Therefore in the *Meridian* it is somewhat higher to us, to wit, almost one *Semidiameter* of the *Earth*.

C H A P. VII.

Concerning the substance and constitution of the *Earth*.

WE have in the foregoing *Chapters* considered the *qualities* or *properties* of the *Earth*, no regard being taken of its substance or being. But now these being declared; it is fitting we consider this also, that we may know what kind of body the *Earth* is, and how its parts cohere together; the which although it may rather seem natural, yet because it is requisite for the perfect knowledge of the *Earth*, we will here handle briefly, leaving the accurate consideration thereof to the *Natural Philosopher*.

Proposition I.

To declare of what simple and similar Bodies the *Earth* may consist, or be compounded of.

There are divers opinions of *Philosophers* concerning this matter. The *Peripateticks* number four *Elements* of the *Earth*, and the whole *sublunary World*, being now sufficiently known to the very *Vulgar*, *Fire*, *Air*, *Water*, and *Earth*. Many of the *Ancients*, as *Democritus* and *Leucippus*, determined that the whole *World* consisted of very little solid pieces, which differ only in their various figures, shapes and magnitude; and them many of the later *Philosophers* do follow; and of late *Cartesius*, endeavoured by such an hypothesis to declare all natural appearances.

Chymists make three Principles, *Sal*, *Sulphur*, and *Mercury*, to whom some do rightly add *Caput mortuum* or the *Dead head*, when as they three are fruitful. But to me, doubtful terms and words being laid aside, and the things themselves well considered, there seem to be five simple Bodies the first Principles of all things, to wit, *Water*, *Oyl* or *Sulphur*, *Salt*, *Earth*, and a certain Spirit which the *Chymists* call *Mercury*. For indeed all Bodies and the parts of the *Earth* are resolved into those five *Elementary substances*. Notwithstanding I deny not that those differ not so much in essence, as in the singular variety of their shapes and magnitudes.

Therefore the whole *Earth* consisteth of these simple Bodies, which are divers ways commixed, from whence ariseth so great variety of Bodies, which do appear different from one another, and similar or Bodies of like parts. But the more exquisite declaration of these points belong to *Natural Philosophy*, which I shall have occasion to treat of more at large in the first Volume of my Book of the *Arts and Sciences*, now ready for the Press.

Proposition

Proposition II.

The *Earth* is divided into dry and moist parts, or into *Earth* and *Water*, to which some join the *Atmosphere*.

This is the vulgar division of *Geographers*, and then the *Water* is taken in a large signification for all that is liquid or moist, and fluid and running, as the *Land* is taken for the whole dry and consistent part of the *Earth*, and thereby doth embrace and comprehend such various bodies of Nature, to wit, *First*, *Sand*, *Loom*, *Clay* and *Mineral Earths*, *Chalk*, *Cinnaber*, *Ochre*, *Terra sigillata* or *Saracens Earth*, *Earth of Samos*, *Bole-Armoniack*, with divers other kinds of *Earth*. Secondly, *Stones* of various sorts, the chief among which are *Diamonds*, *Emeralds*, *Rubies*, *Saphirs*, &c. Thirdly, *Metals*, among which are *Gold*, *Silver*, *Copper*, *Tin*, *Lead*, *Mercury* or *Quicksilver*, *Iron*, *Steel*, &c. Fourthly, *Brimstone*, *Salts*, *Niter*, *Alom*, *Bitumen*, *Vitriol*, *Antimony*, &c. Fifthly, *Herbs*, *Plants*, &c.

To the *Water* are referred, first the *Seas*; secondly, *Rivers* and sweet *Waters*; thirdly, *Lakes* and *Fens*, or *Marshes*; fourthly, *Mineral Waters*, as *hot Baths*, *lowr Waters*, &c.

The *Atmosphere* is that thin and subtile Body, which girts and encompasses the *Earth* towards *Heaven*, and contains the *Air*, *Clouds*, *showers of Rain*, &c. Therefore into these three Parts the *Earth* is fitly divided.

Proposition III.

To expound how the *Earth* and *Waters* cleave or hold together, and make the *Land*.

1. The *Land*, that is, the dry part of the *Earth*, is not bounded with one and that even *superficies* or *surface*; but the hath many hollow *Caves*, many parts lifted up aloft. In her *Cavities*, *caves* or *hollows*, which are here and there found round about the whole *Earth*, the *Sea* or *Ocean* is contained; and therefore part of the *Earthly superficies* is covered with *Waters*. Those *hollows* or *cavities* are not made of an even hollowness, but have here and there *Rocks* and elevated parts, and elsewhere they have *Gulphs* and *swallows* sunk very deep. So the part of the *Earth* appearing out above the *Waters*, hath certain (as it were) *Navels* in its middle, and some parts are more or less raised up, or sunk down, than others. So it cometh to pass, that the *Water* environing the whole *Earth* is hindered, that it overwhelms not the whole *Earth*, but the higher parts, and such as appear above the *Waters* are *Islands*, of which some are great and some small.

2. Besides that continual Channel in the *Earth* in the outward *superficies*, within also in the solid body of the *Earth* there are innumerable *Mouths*, *holes*, *swallows*, *windings*, *conveyances*, *deeps*, *pipes*; and huge vast *Receivers*, in some of which there is the *Sea*, which by that secret conveyance are joyned to the Channel of the common *Sea*; in some again there is *Sweet Waters*, *Rivers*, *Streams*: In some *Spirits*, or else a *sulphury* and *smoking* substance. *Seneca* saith rightly, He gives too much way to his eye-sight, who believeth not, that there are in the hidden and secret bottom of the *Earth* Bays of a vast *Sea*. Neither do I perceive what may hinder, that there may not be some *Sea-shore*, and the *Sea* received by hidden passages. There is therefore no cause of doubting of there being many hollows in the very solid *Earth*: For verily we conjecture at it by these means.

First, by the *Rivers*, which are found in many places where *Earth* is digged, even to a notable depth, which is frequent in *Mines*.

Secondly, in some places the profundity of the *Sea* is beyond all sounding or measure.

Thirdly, there are some *Caves* in the *Earth*. In the Western part of *Hispaniola* is a *Mountain* of a great height, being hollow within with many *Caves*.

Of the four
Elements of
the *Earth*.

The three
Principles of
the *Earth* by
Chymists.

By Others,
Five simple
bodies, the first
principles of
all things.

Of the *Land*,
and its various
bodies of Na-
ture.

Of the *Water*
and its parts.

Of the *Atmo-
sphere*, which
encompasses
the *Earth*.

The *Earth* not
bounded with
one Superfi-
cies, but hath
hollow Cavi-
ties.

Mouths, *holes*
Pipes, & other
conveyances in
the body of
the *Earth*.

Caves, in which *Rivers of Waters* are thrown down headlong with so great sound and rushing noise of streams, that the very fall of those *Waters* may be heard five miles distance.

Fourthly, some *Gulphs* or *Whirlpools* are found in the *Sea*.

Fifthly, *Earthquakes* do also prove the being of Cavities under the *Earth*.

Sixthly, some *Rivers* bury themselves under the *Earth*, as *Niger*, *Tigris*, &c.

Seventhly, *Salt-springs*, which without doubt (for the greatest part) spring and flow from the *Sea*, are found in many places.

Eightly, so in many places the grounds at the entrance of men walking, tremble and shake, as about the Abby of *St. Omer* in *Flanders* in the Province of *Brabant*, (*die Peel*.)

Proposition IV.

The Superficies or surface of the Lands is continual; but that of the Waters is not so.

Indeed the *Superficies* of the *Earth* or *Land* appearing out above the *Waters* is continued, or always the same to the *superficies* of the *Channels* of the *Sea*; and this of the *Sea* again is continued to the other parts of the *Land* appearing above. So there is one continual *superficies* of the *Ocean*, the *Baies*, and *Rivers*, but not of all *Waters*; because there are some *Lakes*, which are not joyned with the *Ocean* in the *superficies*, as the *Lake Parime*, and the *Caspian Sea*.

Proposition V.

It is certain how, or in what manner the parts of the Earth, which are removed from the surface, that is, from our habitation towards the Center.

Some men think, that the *Water* is in the bottom about the *Center* of the *Earth*: but it is most likely true, that the *Earth* occupies that place. *Gilbert* an *English* man is of opinion, that the body of the *Earth* within, is nothing else but a most hard *Loadstone*; but that those parts to which men have admittance by digging, and in which *Herbs* grow and we also live, are as it were the shell or crust of the *Earth*, wherein continual generations and corruptions are made.

* *Cartesius* his Opinion is not much different from this, who thinketh, that there are three *Regions* or *Parts* of divers substance in the body of the *Earth*. The most inward *Region* of the *Earth* he deemeth to be about the *Center* thereof; the second he judgeth to be thick and dusky, of very small parts; the third he thinketh (wherein Men are employed) to be made up of little parcels, not well cleaving together.

But indeed touching this thing, there can scarcely any certainty be affirmed. It is manifest by the *hot-Baths*, that in very many places under the *Earth*, *fire* and *fumes* are lifted up from *Sulphur*.

Proposition VI.

The consistency or standing, and fast cleaving together of the Earth, is from Salt.

The *Artificial* resolving of the *Parts* of the *Earth* sheweth, that in all *Earths* may be found a certain kind of *Salt*, and so much the more; as the harder the body is, (a few *Cilly* ones being excepted;) as in *Mettals*, *Stones*, &c. and that the concretion or hard growing together of all things is by

by reason of *Salt*, is manifest by *stones*, which we may by *Art* make very hard with *salt*: but if you separate the *salt* from the *earth*, she will no longer cleave or stick together, but will be a *powder*; neither can it be reduced to hardness without the admixture of *salt* thereto.

Proposition VII.

The kinds of Earths are divers ways mixed together in the Earth.

Thus in *Mines* are found small pieces of *Gold*, *Silver*, *Lead*, &c. not heaped together, and joyned apart from others, but both mixed among themselves, and also with unprofitable *earth*, according to the least parts, that *Artificers* not at the first sight, but by divers signs do find out what may be contained in any *Metalline earth*. In the same manner in the *Fields*, *sand* is mixed with *clay* or *loam*, *lime*, *salt*, &c. When as on a certain time at *Amsterdam* for making a *Well*, the *earth* was digged out, even to the depth of 232 foot; these sorts of *earth* were shewed to the beholders, viz. of *Garden-earth* 7 foot, of *Black-earth* fitting for *fire*, which is called *Feat*, 9 foot, of *Soft-clay* 9 foot, of *Sand* 8 foot, of *Earth* 4 foot, of *Clay* 10 foot, of *Earth* 4 foot, of *Sand* upon which the *Houses* of *Amsterdam* are wont to be rammed and paved 10 foot, of *Clay* 2 foot, of *White-loam* 4 foot, of *Dry-earth* 5 foot, of *muddy* 1 foot, of *Sand* 14 foot, of *Sandy-clay* 3 foot, of *Sand* mixt with *Clay* 5 foot, of *Sand* mixt with *Sea-fish shells* 4 foot, then a bottom of *Clay* to the depth of 102 foot, and lastly of *loam* 31 foot, where the digging ceased, and they came to *Water*. The Figure of which see among the Schemes.

Proposition VIII.

The Cavities of the Earth, and as well the outward disposition thereof, and the position of its parts, are not perpetually the same, but are at divers times divers.

Indeed not only the *Water* of the *Sea* maketh divers changes and ruins in the parts of the *earth*; whilst certain holes are stoppt up, some are made more broad: but also *Spirits* and *Sulphury Substances* lying hid here and there in the *earth*, when they begin to encrease, and to be resolved into *Vapours*, do impetuously shake and thrust forwards the parts of the *earth*, as it is manifest by *Earthquakes*. And it is likely that such like motions are made in the interior parts and bowels of the *earth*, the greatest part of which we feel not, neither perceive.

But we will speak of the mutual changing of the *water* and *earth* in the *Superficies* of the *earth*, in the eighteenth Chapter.

The

Of Metals found in Mines.

Of the different sorts of Earths, as did appear by the Well digged at Amsterdam.

The water of the Sea maketh divers changes and ruins in the earth, where likewise lie hid Spirits and Sulphureous Substances.

One continual superficies of the Ocean, Bays, and Rivers.

The body of the Earth within (according to Gilbert, an English man) is a hard Loadstone.

* See Fig. But Cartesius is of a different opinion. See Scheme.

In all kinds of Earths may be found a certain kind of Salt.

1. Into great Continents or great Islands, of which four are reckoned by us,

1. The Old World; whose parts are

Asia, Africa, and Europe.

2. The New World, or

America, whose parts are

Mexicana, Septentrionalis,

3. The Polary North-land, or Greenland, is every where encompassed by the Sea and Streights.

4. The South-land, and Land of Magellan, yet undiscovered.

Round, whose Latitude and Longitude are equal about,

Africa it self.
Peloponnesus, the *Chersonesus* of *Grecia*.
Chersonesus Taurica, or *Tartaria Precopensis*.
Cambaja.

Long, among which are

The *Chersonesus* of *Malacca*, adjoining to *India*.
Cimbrica or *Jutland*, adhering to *Holsatia*.
Borea adjoining to *Tartaria*.
The North and South parts of *America*.
California.
Jucatan.

Of Affinity to Peninsulas,

The *Chersonesus* of *Thracia*.
Nova Francia.
Ionis, *Cindensis*, *Mindensis*.
Italy, *Greece*, *Acaia*, *Spain*, *Norway*, *Sweden*, *Lapland*, *Asia minor*, *Arabia*, *Beach* a Region of *Magellan*, and *New Guinea*, *Indostan*, *Cochinchina*, *New-England*, *Monomotapa*, *Cambaja*.

Great, as

England, *Madagascar*,
Japan, *Borneo*,
Island, *Nova Zembla*.
Canada, *California*.

Indifferent, as

Sumatra, *Laconia*,
Sicilia, *Sardinia*,
Ireland, *Friesland*,
Hispania, *Terra Nova*,
Cuba, *Mindanao*,
Java Major, *Ceilan*,
Celebes.

Small, as

Creet, *Gilolo*, *Amboina*, *Timor*.
Corfica, *Majorca*, *Cyprus*, *Negropont*.
Sealand, *Jamaica*.

The very small ones, in which we consider

1. The more famous, *Solitaria*, *Rhodes*, *Malta*, *Lemnos*, *Helena*, *St. Thomas*.

The *Canary Isles*.
The *Flandrian* or *Caribbe Isles*.
The *Hesperides*.
Those of the *Gulph* of *Mexico*.
Of *Maldives*.
Of *Japan*.

2. A knot or heap of Isles together, as

About *Madagascar*.
The *Moluccoes* and *Isles* of *Bauda*.
The *Philippine Isles*.
The *Isles* of *Theeves*.
The *Isles* in the *Aegean Sea*.
The *Isles* about *England*.
The *Isles* of *Solomon*.

4. The *Isthmuses*,
Between *Egypt* and *Arabia*, or *Africa* and *Asia*.
That of *Corinth* between *Peloponnesus* and *Achaia*.
The *Isthmus* of *Panama* or *America* the longest of all.
Between *Jutland* and *Holsatia*.
Between *Malacca* and *India*.

The Earth is divided into Land and Waters. The Superficies of the Earth extant out of the Water by the Interflux of the Sea, is distinguished into these four parts,

3. Islands, which may be considered in four sorts, viz.

On the North, the *Frozen* and *Tartarian Ocean*.
On the East, the *Pacific* and *Indian Ocean*.
On the South, the *Southern Ocean*.
On the West the *Atlantick Ocean*.
On the North, *Davis Streights*.
On the East, the *Atlantick Ocean*.
On the South, the *Pacific Ocean*.
On the West, the *Streights* of *Magellan*.

The bounds of this Continent are

The bounds of it are

Absolute Geography.

SECT. III.

Wherein the constitution of the Land, or the dry part of the Earth, in four Chapters is declared.

CHAP. VIII.

Concerning the natural division of the parts of the Earth, made from the Ocean, flowing round about it.



THE things which in this Chapter we shall deliver concerning the division of the Earth, and in the fifteenth Chapter, we shall teach touching the division of the Sea, will greatly facilitate the young Student in the understanding the distinction of the surface and parts of the Earth, and to fix them the faster in the memory: they are carefully and fully to be read, and to be compared with the *Terrestrial Artificial Globe* and *Maps*.

Proposition I.

A certain portion of Earth is covered with Water, and a certain part stands out above the Surface of the Water; but yet there are some parts which at some time are covered with Water, and some parts are free from them and conspicuous, as many Islands by *Norway*, *Scotland*, and other Countries: Add to these the *Seds* or *Shelves* of *Sind* and *Seabores*. But seeing these parts are so small, we take no account of them at present; neither will we move that Question here, Whether the Land takes up the greater part of the Superficies of the Earth, or whether the Water? We will treat of this briefly in the eighteenth Chapter. Now we will consider the part standing up, or extant above the Waters, and we will call it *Lands* or *Islands*.

Of parts of the Earth covered, and of parts not covered with water.

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Proposition II.

The Earth standing out above the waters, not one but many Lands: of which may be five sorts.

The Land or Earth standing out above the Waters is not one, and continual, but many Lands divided and disjoyned from one another by the Water flowing in between them. We will make five differences of them, to wit, 1. The greatest Lands or Islands; 2. The great ones; 3. The mean ones; 4. The little ones; and 5. The least ones. We will treat of the cause and original of these Lands extant or above the Waters, or of the Islands, in the eighteenth Chapter; for there will be a more commodious place to treat of this Matter or Subject.

All Lands extant above the waters may be called Islands.

But all Lands extant above the Waters were to be called Islands, seeing that an Island is no other thing then a Land begirt with Waters; yet the common use of speaking hath taken away from the greatest Lands this name, because that they are so great, and of such a huge tract and continuance, that the Circuit of the Water is thereby the less to be perceived. Inasmuch that they are usually called the firm Land, and also great Continents. And indeed by reason of their vast bulk and greatness, unto which the magnitude of other Islands being compared, is small, they deserve this peculiar name; therefore we will also call them firm Lands and great Continents.

Proposition III.

The firm Lands four.

The greatest Lands, Continents, or Islands (not contending with any about their name) are four.

First, the Old World; Secondly, the New World or America; Thirdly, the Polar Land Artick, or Artick World; and Fourthly, the South-Land or Magellanick Land.

The old world most famous, with its bounds, &c.

The Old World, the most famous of those four, and only known of the Ancients, which we inhabit, is commonly divided by the Sea into two parts, but joyned together by an Isthmus, or narrow neck of Land; one whereof is Africa, and the other Asia and Europe. It is invironed by the Ocean in this manner: from the East by the Chinesean Ocean and the Pacifick Sea: from the South by the Indian Ocean and Ethiopick Sea: from the West by the Atlantick Sea: and from the North by the Frozen or North Sea, the White Sea and Tartarian Ocean.

Africa divided from Asia and Europe.

The division of this Continent of which we have spoken, is made by the Mediterranean Sea and the Arabick Bay or Red-sea. For the distance of the Bays, that is the Latitude or breadth of the intercedent Tract, is not greater then about 30 miles, if which were away, Africa would make a peculiar firm Land, and would increase the number.

The distance of the old world from the new.

The distance of the Old World towards the East, is but a very little space from the New World or America, about the Streight of Anian, if only this be existent in the Universe of Nature. And the distance of Europe from America is also very little between Norway and Newfoundland. Also the Old World is but a very small distance from the Pole Artick-land about the Streight of Waigats, from the South Polar or Magellan about New Guiney.

The new world, with its bounds, &c.

The New World or America is thus begirt by the Ocean; On the East by the Atlantick Sea: On the South by the Magellanick Streight; On the West by the Pacifick Sea; and on the North by a Sea unknown or uncertain, except Davis Streight.

This World also wants but little, but that it may be cut into two Islands, to wit, at Panama and Nombre de Dios, where the confluence of the Pacifick and Atlantick Ocean is by a small Tract of earth intercepted. It is distant from the Old World a very little space, as before noted.

The Polar Artick and South Land, with its bounds, &c.

The Polar Artick, and the South or Austral Land, are begirt round with the Sea; the first with the North Sea, whose parts are the Streights of Davis, Waigats, and Anian. This South-land with the Pacifick Sea, Indian Ocean, and Magellanick Streight.

The

The Polar Artick Land hath a very little distance at the Streights of Waigats from the Old World: from America at the Streight of Davis. But it is removed from the South-land by a huge space.

The Polar Austral, or rather the South-land, is very nigh to the Old World at the running out Tract of New Guiney; as also to America at the Streight of Magellan.

But concerning the South-land, only we have assuredly discovered, that it is round about environed with the Sea, and is separated from the rest. Concerning the rest of the Lands, to wit, the Old World, America, and the Pole Artick World, the matter and discovery is not yet certain, whether they be round about begirt by the Sea, and separated from one another: but yet it is very likely they are so, by reason of divers Bays and Entrances of straits running within the Earth. The South-land only as yet is fully sailed about; this could not be hitherto performed in the rest. For the Old World as yet hath not been sailed round beyond Waigats Streight, although the whole Western, Southern, Eastern shore hath been viewed, and that but a little part of the North shore remaineth to be discovered. America hath been sailed round, only part of her Septentrional shore being excepted, by reason of the uncertainty of the Streights or narrow Seas. Thus have we declared the placing of the greatest Islands or Continents.

Proposition IV.

We reckon up ten great Islands on the Surface of the Land, which are these following:

1. Britain, comprehending England and Scotland; it is esteemed the greatest of all Islands which are commonly so called, those being excluded which in the foregoing Proposition we have related at large.

2. Japan, which in Maps and Globes hath a lesser magnitude than it ought to have: for they which have been there affirm, that it is as great, if not greater than Britain.

3. Luconia, one of the Philippine Isles, which also from its Metropolitan Town is called Manilla.

4. Madagascar or St. Laurence, seated on the Eastern shore of Africa.

5. Sumatra, one of the Indian Isles.

6. Borneo, not far from Sumatra.

7. Island, not far from Norway.

8. Newfoundland, nigh unto Canada.

9. Between Davis Streight and Hudsons Streight in the Northern Ocean, lyeth a great Island about the Polar Land, which according to Visser's Universal Tables, is in form round.

10. Nova Zembla, nigh unto Russia.

To these is California to be also numbred, if that be an Island, which it is esteemed to be, and not a part of America.

Proposition V.

We number up ten mean Islands on the Surface of the Earth, viz.

1. Java, one of the Indian Isles.

2. Cuba, nigh unto Hispaniola.

3. Hispaniola.

4. Ireland, nigh unto England.

5. Crete or Candia, not far from Greece.

6. Sicily, nigh unto Italy.

7. Ceylan, one of the Indian Isles.

8. Mindanao, one of the Philippine Isles.

9. Sardinia, seated in the Mediterranean Sea.

10. Celebes in the Indian Ocean.

To these may be numbred Friezland, an Isle not far from Island.

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Proposition VI.

Ten little Isles.

We will also number ten little Islands on the Surface of the Earth, to wit;

1. *Gilolo*, one of the *Indian Isles*.
2. *Amboina*, not far from *Gilolo*.
3. *Timor*, one of the *Indian Isles*.
4. *Jamaica* in the *Bay of Mexico*.
5. *Sealand* in *Denmark*.
6. *Corfica*, seated in the *Mediterranean Sea*.
7. *Eubæa*, now *Negropont*, seated in the *Mediterranean sea*.
8. *Majorca*, nigh unto *Spain*.
9. *Cyprus*.
10. *Isabella* in the *Pacifick Ocean*.

There are more Islands which may be reduced to this rank, but we shall refer them to the last order of them, as more commodious.

Proposition VII.

The least Isles.

Of the least Islands there is almost an innumerable multitude on the Surface of the Earth; among which these following deserve a peculiar consideration: First, the famous *Solitary Islands*; Secondly, those which are found in great numbers in some Tract of the Ocean, and for their Neighbourhood are comprehended under one name.

We shall term them in general, a body or fry of Islands, because we are left destitute of a more fitting name. The Tract of Sea wherein these Isles lye, is called the *Archipelago*. The notable *Solitary Islands* are in the *Mediterranean Sea*, *Rhodes*, *Malta*, *Iviza*, *Minorca*, *Chios*, *Cephalonia*, &c.

In the *Atlantick Ocean* between *Africa* and *Brazile*, lieth the Island of *St. Helen*, where also the Island of the *Ascension*, the Isle of *St. Thomas*, is placed in the very *Equator*.

The Island *Madera* over against the *Gaditane Streight*.
Zocotora, seated before the mouth of the *Arabian Bay*.
Gotbland in the *Baltick Sea*.

Among the notable *Solitary Isles*, those are also worthy of remembrance which swim on the waters, of which see *Chapter* eighteenth.

Proposition VIII.

The lesser Isles.

There are fifteen fries or files of the least Islands numbred on the Surface of the Earth; to wit.

1. The *Canary Islands* in the *Atlantick Sea*.
2. The Isles of *Azores* in the Northern Sea.
3. The Islands of *Hesperides*, or the *Green Islands*, over against *Cape Verd*.
4. The Islands of *Maldives* in *Indian Ocean*.
5. The *Lucar Islands* between *Florida* and *Cuba*, nigh unto *America*.
6. The *Princes Islands* between *Hispaniola* and *America*, to which I refer and reduce all the least Islands seated in the *Bay of Mexico*.
7. The *Camercan Isles* lying before *Hispaniola*.
8. The *Mascarenian Islands* between *Madagascar* and *Africa*.
9. The *Molucco Islands*, seated in the *Indian Ocean*.
10. The *Philippine Islands* in the *Pacifick Ocean*.
11. The *Aegean Islands*.
12. The *Japonian Isles*.
13. The Islands of *Solomon* in the *Pacifick Sea*.
14. The Isles of *Theeves* in the *Archipelago* of *St. Lazarus*.
15. The Isles of *Banda* nigh unto *Java*.

16. The

16. The Islands scituate near *England* and *Scotland*; as the *Hebrides*, *Orkades*, *Sourlings*, *Sporades*, &c.

17. The Islands between the *Magellanick Streight* and the *Streight Le Maire*. Here I do not reckon to these those Islands which lye close on the shore, of some Continents in great numbers, as on the Coast of *China*, *Norway*, *Brazile*, *Davises Streight*, &c.

Other Isles may be reckoned.

Unto this rank also the Islands in great Rivers are to be referred and marshalled, as such as are found in the River *Nile*, in the River of *St. Laurence of Canada*, in the River *Volga*, and in some other Rivers; as also those which are in certain Lakes, as in the *Lake Zembre*, a Lake in *Africa*; in *South America*, where the Islands of *Lead* are scituate in a Lake, &c. But all (or most of) these Isles, especially these foregoing, together with several others, I have largely treated of in the *Geographical Description* of the four Parts of the World in their fit places, to which I refer the Reader.

Proposition IX.

The Parts of all Lands or Islands are not of the same shape or figure, but are unlike. The more famous differences of these are a *Peninsula* and an *Isthmus*.

A *Peninsula* or *Chersonese*, that is, such a Tract of Land that is almost encompassed by the Sea, except at one only narrow place, where with a strait neck of Land, (called an *Isthmus*) it is knit to the Main Land.

A Peninsula.

An *Isthmus* is that narrow or strait neck of Land that couples and joyns the *Peninsula* to the Continent or Main-land, and that by which we pass out of one broad Land into another.

An Isthmus.

The *Peninsula's*, *Chersonesuses*, or *Chersoneses*, that is, running out Lands, are these following, to wit; 1. *Italy*, 2. *Spain*, 3. Part of *England*, 4. All *Greece* and *Macedonia*, 5. *Norway* and *Swedeland*, with *Lapland*, 6. *Asia minor*, 7. *India*, 8. *Camboia*, 9. *New Guiney* of the South-land, 10. *Beach*, a Country of the same Land, 11. Part of *Virginia* and *New-England*, 12. The *Tongue of Africa*, &c.

Of Lands which are (or may be termed) Peninsula's.

Proposition X.

We will number up further fourteen *Peninsula's* or *Chersoneses*; and these we will divide into longish ones, and somewhat round ones.

Other Lands termed Peninsula's. The Chersonesuses of the Ancients.

The longish ones are, first, the *Golden Chersonese* of the Ancients, now called the *Malaccan Chersonese*, and joyns to the *Indies*.

2. The *Cymbrick Chersonese*, now called *Jutland*, adjoining to *Holsatia*.

3. *California*, on the Western side of *North America*, near the Sea *Vermejo*. But late Observations report it to be an Island.

4. *New Frante*, on the Eastern side of *North America*.

5. The *Jucatan Chersonese* in the *Bay of Mexico*.

6. The *Thracian Chersonese* on the *Hellepont*.

7. The *Cassandrian Chersonese* by the Bay of *Thessalonica* in the *Grecian Sea*. There are also certain *Peninsula's* less celebrated, of the lesser *Asia*, to wit, *Ionia* or the *Smyrnenian Peninsula*; 2. The *Cnidensian*, or the Countrey of *Doria*; and 3. The *Mindensian Peninsula's*.

Concerning *Corea*, it is doubtful whether it be a compleat Island or a *Peninsula*. Some Maps joyn it to *Tartary*, some again begitt it round with the Sea; yet notwithstanding the latest Observations make it a *Peninsula*.

The somewhat round Peninsula's are,

1. *Africa* her self, a huge part of the *Old World*, is such an one: it is environed with the *Mediterranean Sea*, the *Atlantick Ocean*, the *Aethiopic*, *Indian* and *Red-sea*: It sticketh fast to *Asia* by a narrow Tract of Land at *Egypt*.

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2. Three

2. Three parts of *America*, to wit, *Mexican* and *Peru* stick fast together at *Panama* by a narrow passage of the Earth.
3. *Peloponnesus*, now called the *Morea*, being part of *Greece*.
4. *Taurick Chersonese*, or *Peninsula* in the *Euxine Sea*, and the mouth of the *Fen Mæotis*, now called the *Precopentian Turyary*.
5. *Cambai* in *India*.

Proposition XI.

We reckon as many *Isthmuses* as *Peninsula's*; the more famous are five in number.

1. The *Isthmus* between *Egypt* and *Asia*, whereby *Africa* joyneth to *Asia*.
2. The *Corinthian Isthmus* between *Peloponnesus* and *Greece*.
3. The *Pandemonian Isthmus* between *Mexico*, *America*, and *Peruvia*.
4. The *Isthmus* between the *Chersonesus Aurea*, or *Golden Chersonesus*, and the *Indies*.
5. The *Isthmus* of the *Taurick Chersonese*.

CHAP. IX.

Of Mountains and Hills in General.

Touching *Mountains*, very many things worthy to be known in *Geography* will here occur and meet us, partly because they seem to hinder the roundness of the *Earth*, and partly because divers things amongst renowned Authors are here delivered concerning them.

Proposition I.

But a *Mountain* or *Hill* is said to be a part of the *Earth* rising aloft, which if it be lesser, is called a *Hillock* or *Clift*.

Also a *Promontory* is said to be a *Hill*, or *Mountain* running out at length into the *Sea*. *Rocks* are called parts jutting or appearing forth in the *Sea*, or also arising up out of huge stony Bulks or Bodies. But it must be generally known, that the parts of the *Earth* which appear plain, are not all of the same height, but some are sunk lower, especially at or near the *Sea* shores, inasmuch as the height encreaseth from *Maritime* places, or such as abutt upon the *Sea*, even to the *Inland* Regions. This also is proved by the *Fountains* and *flowing Streams* of *Rivers*: For seeing that that part of the *Earth*, to which the *water* floweth, is lower than that from which it floweth, and that the *Fountain-heads* and *Springs* of *Rivers* are seldom in the *Inland* places, and such as are far remote from the *Sea*: It is clearly manifest thereby, that the *Inland* places are more elevated than those adjoining to the *Sea* Coasts. So *Bohemia* is higher than *Holsatia*; which is perceived by the streaming course of the River *Elbe*, which floweth from *Bohemia* to *Holsatia*. In like manner we take apparent Signs and Arguments of the greater height of *Inland* places, from the Rivers *Danubius*, *Visurgis*, *Rhene*, *Mosa*, &c. The *Swissers* and *Rhetians* Countries are judged by some men to be the highest of all *Europe*, because the Rivers *Rhene*, *Roan*, and the greater *Danou* do flow and stream down from thence. Moreover, look how great the declivity or bearing downwards of the Rivers are, so great is the height of the *Inland* places above the *Maritime* places.

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Proposition II.

To find out the height of a *Mountain* by Geodesic or Land-measuring, commonly called Surveying.

This is performed in the same manner which we use in the searching out the height of *Towers*, if so be the top of the *Mountain* or *Hill* is remarkable by some peculiar sign.

Let *A B* be the *Mountains* height, *A* the foot, *B* the conspicuous head thereof. We will take the line *F C* by a mean distance from it, so that neither of the Angles *A F C*, *A C F* may be made very acute, but may in a manner be equal. Then let the Angles *A F C*, *A C F* be observed by a collimation, or levelling with winking be made to *B*, and these being subtracted to 180 degrees, the remaining degrees shall shew forth the Angle *C A F*. After that the distance of the stations of *F C* is exquisitely to be measured; and let it be wrought, As the sign of the Angle *F A C* to the sign of the Angle *C A F* (or *F C A*, if you would take *F A*) so *F C* to *A C*, the distance of the *Mountain* from *C*. Then the Instrument being hanged up, or placed upright in *C*, and levelling with the Eye to *B*, let the Angle *B C A* be taken. And because the Triangle *C A B* is *strait angled*, to wit, the Angle *B A C* is *strait*, therefore also the Angle *A B C* of 90 degrees shall be given.

Let it therefore be wrought by the Triangle *B A C*: As the whole sign 10000000 to the Tangent of the Angle *B C A*, so the distance *A C* to the perpendicular height of the *Mountain* *A B*.

For Example, Let us put it, that *Xenagoras* the Son of *Eumelus* used this manner or way of Measuring in finding out and knowing the height of the *Mountain Olympus*, and to have found the Angle *A F C* to be 88 degrees, 29 minutes: but the Angle *A C F* 57 degrees, 30 minutes. Therefore *C A F* shall be 34 degrees, 13 minutes; and by measure he found *F C* to be 400 *Grecian* foot, or two third parts of one *stadium*. Therefore it shall be; As the sign of the Angle *C A F* 34 degrees 13 minutes, to the sign of the Angle *A C F* 57 degrees 13 minutes: So *C F* 400; the foot of the *Mountain* to the distance *F A*: to wit, as 56226 to 84339, so is 400 to 600; therefore *F A* is 600 foot. Furthermore, let the Angle *B F A* be found 84 degrees 23 minutes: It shall be in the Triangle *F A B*, as 100000 to the Tangent of the Angle *B F A* 1016000: so 600 to 6096 foot for *A B*, the height of the *Mountain Olympus*: but 600 foot make a *stadium*. Therefore 6096 being divided by 600, there are found 10 *stadiums*, and 96 *Greek feet* for the height of the *Mountain Olympus*, just so much as *Xenagoras* found it to be. But these *stadiums* make of a *German* mile with $\frac{1}{12}$, or about $\frac{1}{12}$.

Aristotle, with many other Writers affirms, that the height of the *Mountain Olympus* is so great, that the top thereof feels no motion of the Air, or showers of Rain, and also that it is elevated above the second Region of the Air: and the *Ancients* gathered that, by the *Ashes* left thereon, being never moved thence by any Wind; and by the draughts and forms of Letters, being no whit consumed, but found there after divers years, fresh, and as they were there drawn at the first.

It is to be noted, that in divers places the height of the *Mountain* is also diverse; therefore the consequence availeth not. The Clouds do likewise cover this *Mountain*, therefore it is as high; for indeed in the Northern parts and Coasts of the World, the Clouds are a great deal lower.

There is also another manner of Measuring in plane, the *Mountains* by two *stadiums* in the same *strait line* with the *Mountain*; but it is prone to error, by reason of the small difference of the Angles.

Yet by one height known; as for example, by a *Tower*, whose height is known, and the distance from the *Mountain*, we shall more accurately gain the height of the *Mountain*, viz. if we suppose *F* to be the *Tower* 300 foot high, and on the top thereof, or in some commodious place, the Angle *B F P*

For the finding out the height of a *Mountain* by Geodesic.

See Scheme.

The height of the *Mountain Olympus* measured by *Xenagoras*.

The *Mountain Olympus* laid to be very high by *Aristotle*.

Another way to find the height of a *Mountain*. See Scheme.

Of the chief Peninsula's.

Of Mountains and Hills.

Of Promontories and Rocks.

Inland places higher than those near the Sea-coasts.

be observed to be 83 degrees 30 minutes. PB shall be found to be 5896 foot, to whom BA the height of the Tower must be added.

Proposition III.

The height of the seen Mountain being given or known, to find out Geodetically, or by Land-measuring, how great distance we are from it, if we have either a Geometrical Instrument or Radius, or Altimetrical Scale without, that is to say, a Height-measuring Scale.

Another way to find the height of a Mountain.

See Scheme.

Let AB be again the height of the Mountain, being now known by the descriptions of the other 10 Stadiums, and 96 Greek feet, or 6096 feet. Let F be our place, and let us desire to know the distance FA . Let the Angle BFA be taken by a Geometrical Instrument or Quadrant; let it be for example 48 degrees 23 minutes: Therefore the Triangle *sra*t Angled BAF , when three are known, it shall be, As the whole *sign* to the Tangent of the Angle ABF , 5 degrees 37 minutes: So BA the known height shall be to the demanded AF .

As 100000 are to 9234, so 6096 to 600 foot, or one stadium: Therefore at so great a distance, which is FA , we are from the Mountain. If we use a Land-measuring Quadrant, or Square, or Radius, we shall not then need the Canon of *signs*, which is manifest by the declaration and explication of the Instruments; but yet the calculation or computation becomes thereby not so accurate, by reason of the want of true proportion.

Note, In these two Problems I have added Geodetically, because the manner of measuring is otherwise, when we use a Semidiameter, or Periphery of the Earth, as we shall now propose: For in the former we have taken the distance FA as a *sra*t line, because there is but a small difference between that and a crooked line.

Proposition IV.

A distance being given, from whose term or extreamest boundary the top of the Mountain is first seen, to find thereby the height of the Mountain by Geography.

A distance of a Mountain being given, to find the height. See Scheme.

Let us take the most high Mountain of Teneriff, called *El Pico*, or the Pike, and let $ABCD$ be the periphery of the Earth, and indeed the Meridian of that Mountain: Let the Center be R , the Mountain it self AB ; let from B a *sra*t Tangent-line be drawn to the periphery BF . F then shall be the furthestmost or first point, from which the top of the Mountain B shall be seen: let FR be drawn.

But some Mariners do testifie, that when they are four degrees distant from it in the Meridian, they can descry the top of that Mountain. Therefore the Arch AF shall be four degrees: Let us therefore suppose that this Relation of our Seamen is true, and that the first visive ray BF come directly from the top of the Mountain B ; and let us search out, how great the height of the Mountain may be, if the matter were so. The Angle BFR is *sra*t, and because FA is four degrees, therefore also the Angle BRF is four degrees, and RF the half diameter of the Earth is known; and in the Triangle BRF are the three given, and it shall be,

The height of the Mountain *El Pico* in Teneriff.

As the whole *sign* to the Secant of the Angle BRF four degrees, so RF to RB . As 10000000 are to 10024419, so 3440 Italian miles RF , or 860 German miles, to 3448 Italian miles for RB : take away thence 3440 for RA , and there remains 8 Italian miles, or 64 Stadiums, or two German miles for the height of the Mountain AB ; which is almost incredible, and altogether against the Ancients and Old Geographers. Therefore it is to be known, that there are two things taken in the Problem which are false; first, that that Radius or Ray, which coming from B first strikes the Eye, is direct, when as yet

yet by reason of the thickness of the Air it is refracted or turned. Indeed from B the top of the Hill, there cannot be a *sra*t line drawn to F (if FA be four degrees,) but that first it must incur or run upon the Earth; and therefore the top B cannot be seen directly in the place of F , but by a refracted Radius, to wit, BT , which is broken, and indeed the first of the broken rays, which may reach to F .

If therefore we suppose, that this refraction brings it to pass, that this Mountain may be sooner seen by one degree, than it would be seen, if it were without this Refraction, to wit, with a direct ray BF to be seen from three degrees AF , the height AB shall be found out according to the declared form of five Italian miles, or 40 Stadiums. But because it is also likely (which is the second) that our Seamen speak more at large, and not with so accurate a dimension; if we therefore subtract yet half a degree, so as we may resolve that it is seen 2½ degrees thence, or 38 German miles for FA : This I say being put, and our Calculation being ordered as at first, the height of the Mountain AB shall be found to be about one mile.

If the Mountain may be seen from the distance of two degrees (the refraction being set apart) it shall be 2½ Italian miles high.

But if it can be seen at one degrees distance, or 1½ German miles, it shall be in height half an Italian mile, or about 5 Stadiums high. To this end we add the Table following:

If the height of the Mountains be ½ mile Germ. ½ mile 1 1½ 2 2½ 3	
Then it shall be seen from the distance of miles	14 18 20 25 26 27 28 29

But all these things are to be understood without Refraction, which for the most part increaseth the seen height of the Mountain, and the distance of the sight, as you may perceive by the description; for the refracted Radius TF produced, gives the height NA .

Proposition V.

The top of any Mountain being first seen, whose height is known, to find by Geography how great space we are from it.

This is the consequent of the former Proposition, and the solution thereof may be fetch'd from the Table before described: but the Calculation will shew a more accurate solution. Let therefore the known height of the Mountain be AB , and let it be seen in F , it may please us to know the distance AF , BF toucheth the Periphery. In the Triangle *sra*t angled BF , the Angle F is *sra*t, and the two sides RF , the half diameter of the Earth, and RB the same half diameter with AB are known, which we may put to be half a German mile. And because RF and RA is 860, RB shall be 860: And it may be wrought, As RB is to RF , so the whole *sign* to the *sign* of the Angle RB .

As 860 to 860, so 10000000 to
In Rhindlandish feet { As 19609700 to 19598300, so 10000000 to 9994186,
the *sign* 88 degrees, 2 minutes, 40 for RB .

Therefore BRF , that is, the Arch AF shall be one degree, 55 minutes, 20 seconds. Therefore from this distance the Mountain shall be seen with refraction of Rays, if it is half a mile high; to which for the Argument of Refraction we may add eight miles, inasmuch that it may be seen at the ordinary distance of 37 miles: But the refraction also varies according to the diverse Altitude of the Sun, neither is it absent before the rising, or after the setting of the Sun. But we will treat more at large concerning this business in the Chapter touching the Air, and the Third part of this Book, where we shall discourse of the visible Horizon.

Proposition

See Scheme. The top of a Mountain whose height is known, to find at the first sight its distance.

Proposition VI.

The length of the shadow being given, which any mountain casteth, and the height of the Sun being given to that time, to find out the Altitude of the Mountain.

We will propose this *Problem* rather for its Antiquity and pleasantness, than that we think that the Altitude may accurately by the shadow be obtained.

To find out the Altitude of a Mountain by its shadow, knowing the height of the Sun. Of the Mountain *Athos*, its height, &c.

See the Scheme to the fifth Proposition.

Plutarch and *Pliny* have written, that the Mountain *Athos* will cover or hide the sides of the *Lemnian Heifer*, because the Mountain *Athos* situated on the shore of *Macedonia*, is so highly elevated, that its casts its shadow into the Island *Lemnos*, the Sun being in *Cancer*, and indeed into the Market of the City *Myrrhina*, where the boundary or end of the shadow was signified by a *Brazen Heifer* there erected, which the *Inhabitants* placed there for the strangers and wonder of the matter: And *Pliny* writeth, that the interval or distance between the Mountain *Athos* and the Isle *Lemnos*, is judged to be 87000 paces, or 87 *Italian* miles. But Writers have not noted the Altitude of the Sun, according to the shadow thereof: but yet it is likely, that this shadow cast from the Sun being at the point of setting, or when it began to be hidden from the City *Myrrhina* by the Mountain *Athos*; (for *Athos* standeth Westward from the Isle *Lemnos*;) or when in it, it was hid from the Vertical point of *Myrrhina*, which is drawn through the Mountain *Athos*. But although we may put, that the Sun was then as it were in the Horizon of *Myrrhina* F O, and so that the Radius O F passed through the top of the Mountain B, and cast the shadow A F, and O F shall be the Tangent of the Periphery; and because F R is given, and the Angle F R B (or by taking the Triangle B A F, and F A as a *strait line*) B A shall be found to be eight *Stadiums*, the height of the Mountain. But because notwithstanding in this position of the Sun, the term or boundary of the shadow cannot be noted, because it is infinite; and besides that, the buildings of the City *Myrrhina* might hinder both the shadow and the near Rays of the Sun near to the shadow: Therefore it is to be determined, that the Sun at the least was elevated two degrees above the Horizon of *Myrrhina*. For example, In S, that the Angle S F O be two degrees, and the Radius of the Sun passing through the top of the Mountain T, and ending the shadow in F.

Therefore in the Oblique angled Triangle R T F, the given Angle shall be T F R 92 degrees, and F R T is given one degree 16 minutes: And therefore F T R is 86 degrees 45 minutes; and the half diameter F R is known, 860 *German* miles. Therefore T R shall be found according to the proportion,

As the *sign* of the Angle F T R 86 degrees 54 minutes, to the *sign* of the Angle T F R 92 degrees: so F R to R T, 860.

Therefore R T shall be 861 *German* miles, and A T the height of the Mountain *Athos*, somewhat above one *German* mile.

If we take the Altitude of the Sun one degree, the height of the Mountain *Athos* will be found to be 20 *Stadiums*.

Yet notwithstanding I esteem the over great distance of *Lemnos* from the Mountain *Athos*, assigned by *Pliny*, to be the cause of the over great Magnitude arising from the Calculation: For *Sophians Table of Greece*, and *Blavius* his Table of Modern Greece, do only exhibit and allow 55 *Italian* miles; the distance for F A. Therefore the Angle F R T shall scarcely be one degree, to wit, 55 minutes; and the Altitude of the Sun, one degree 30 minutes; and therefore F R T, 87 degrees 35 minutes; and if it be done in the Triangle F R T,

As the *sign* of the Angle F R T 87 degrees 35 minutes, to the *sign* of the Angle T F R 91 degrees 30 minutes: so F R 860, to R T. Or in the Triangle T F A, *strait angled* to A, the Angle T F A shall be one degree 30 minutes; and F A is assumed as the *strait* or right of 55 miles. The Altitude A T shall be found according to this Proportion: As the whole *sign* to the Tangent of the Angle T F A, one degree 30 minutes: So F A 55 miles, to A T the height of the Mountain.

Here

Here also is the *Problem* to be answered, viz. How the height of any Mountain may be found, if it be fully searched out? how much sooner the Sun is seen to rise in the top of that Mountain, than at the foot thereof? And contrariwise, if the Altitude be given, how, and in what manner this difference of time is to be found out? touching which matter *Aristotle* and *Pliny* have delivered incredible stories, and such as the true Calculation and account do teach to be evidently otherwise. But seeing this cannot be explicated without the solution of another *Problem*, which we have referred to the second part of this Book: therefore we will defer these two *Problems* to the Thirtieth Chapter.

Proposition VII.

The Altitude of Mountains hath no sensible proportion to the half diameter of the Earth, or else so little, that it hinders the roundness of the Earth no more, than a pointed nose upon the surface of the Artificial Globe.

For we have shewn that the Mountain of the Island *Teneriff*, called *El Pico de Tayde*, to have no greater Altitude than one mile, or at most 1 1/2 mile. And certainly, Experience can scarcely find out a Mountain higher than that. Seeing therefore the half diameter of the Earth is 860 miles, it shall be the model and account of the greatest height of the Mountains to the half diameter of the Earth, which is 1 to 860, to wit, of which parts the half diameter of the Earth or any Globe is 360, one of such the greatest height of the Mountains shall have. And whereas there are very few Mountains of so great height, but that very many of them scarcely ascend to the fourth part of a mile; it is manifest, that they heave or lift up the roundness of the Earth no more, than certain ruggednesses in Globes made by the hands of Artificers, do disproportion the roundness of those Globes. For indeed there is no body in the whole nature of things, that can have an exact Geometrical roundness.

The height of the Mountains no hindrance to the roundness of the Earth.

Proposition VIII.

Why showers of Rain, Mists, and Snows, are frequent on the tops of Mountains, when as in the neighbouring Valleys the Air is serene and calm without any such Meteors?

They which have travelled on the high Lands or Mountainous places of *Asia*, *Peruvia*, and other Countries, aver, that it oft falls out, that they which are conversant on the top of Mountains, do there feel and find showers of Rain, Snow, and thick and foggy Mists; but descending thence to the Valleys lying thereunder, they feel no such thing, but find a clear and calm Air. We sometimes observe the same in the Mountains of our own Country.

Showers of Rain, Snow, Mists, &c. on the tops of Mountains, when not in the Valleys.

Some say, that the cause of this Phenomenon or appearance is, that the Mountains attract thither the Air and Clouds; but they do not declare, by what faculty or power they may do it, and therefore they say nothing to the purpose. It seems to me, that it is done in this manner: The vapours and exhalations, when as in the middle Region of the Air, (in which very many tops of Mountains are) they are condensed into small drops, begin to decline downward. And because the top of Mountains are nearer to those vapours and exhalations condensed in the middle Region of the Air, than the Valleys lying under them; therefore those small drops, which are above those Mountain tops, coming first to the ground, leave a place in the Region of the Air, which presently the next small drops do enjoy; because they are forced and thrust forth by others; either by reason of Natures abhorring and shunning of vacuity or emptiness, or because this is the nature of Water, that it flows and runs to that place where its flux or flowing first began, or where the place is more low and sunk.

H

Propo-

Proposition IX.

Whether the Superficies of a Mountain be more capacious, than the plane underneath it, upon whom it standeth?

Of the Superficies of Mountains.

Geometry proves it to be greater; but yet it is another Question, Whether therefore it can sustain the more Men, or bear the greater plenty of Provision? I prove the Affirmative: for although all things placed in a Mountain ought to be perpendicular to the under sunk or placed Plane, yet greater store of Earth and a greater surface is there.

C H A P. X.

Of the differences and tract of Mountains; and in special, concerning Burning Mountains.

Proposition I.

Some Mountains are bounded about with a little space; Others extend themselves out, and march forth at a long reach and trace.

Of Mountains or Hills.

AND these Mountains or Hills of the later sort are called tops, yokes, or chains of Mountains or Hills. There are found such like Chains of Mountains or Hills almost in all Countreys in the World, so that they may be judged to be thereby continual, but that small spaces interpose and thrust in themselves; but they march out at length into divers Coasts: some from the North into the South, some from the East into the West, and other some to Coasts collateral to the Cardinal points.

The most famous Chains or Cliffs of Hills are these following.

Of the Hills or Mountains called the Alpes.

1. The *Alpes*; which separating *Italy* from the neighbouring Countries, extend themselves out by a vast tract of Earth, and do as it were send forth their Arms into other Provinces and Countries, to wit, through *France* to *Spain*, where they are called the *Pyrenean Hills* or Mountains; and to *Rhetia*, where they are called the *Rhetick Hills*; and to *Hungaria*, where they are named the *Hungarian Mountains*, and doubtful ones; then above *Dalmatia*, the *Dalmatian Hills*; and they are stretched out through *Macedonia* to *Thrace* and *Pontus*. But because there cometh in a little space between the *Julian* and *Dalmatian Hills*; therefore some men determine, and make the end of the *Alpes* to be in the *Julian Mountains*. It sendeth out one Arm with continual chains and yokes of Hills, and with a winding course, like a crescent, passing through all *Italy*, and dividing it into two parts, it runneth along even to the *Sicilian Sea*: Neither doth it march forward in one form every where, but in many parts it putteth forth collateral, or side-Companions and fellow Branches, as it also sendeth forth some Mountains styled with several Names, as the Mountain *Massivus*, the *Fill Gaurus*, *Monte di Capua*, or the Mountain of *Capua*; and the burning *Vesuvius*, &c.

2. The

2. The Hills of *Peru* or *Peruviana*, the longest of all others; for they pass through the whole *South America*, even from the *Equator* to the *Magellanick streights*, and do separate the Kingdom of *Peru* from other Provinces, inso-much that the whole tract of this Chain of Hills is about 800 *German miles*. And the heads or cliffs of the Hills are so high, that they are reported to weary Birds in their flight over them: and there is but one only passage over these Hills (which as yet is discovered,) and that very cumbersome. Many of those are covered with perpetual *Snows*, as well in Summer as Winter; and many of them are also wrapt up and involved with the Clouds, and some likewise are elevated beyond the middle Region of the *Air*. Truly it hath hapned, the *Spaniards* sometimes passing out of *Nicaragua* into *Peru*, that many of them, together with their Horses, on the tops of those interposed Mountains, have suddenly died, and if they had become stiff with cold Frost, they remained there immovable like standing Images. The cause of which seemeth to have been the want of *Air*, such as our breath or Lungs require. There are also found in these Mountains *Sulphury* and *Smoking Hills*.

The Hills of Peru.

These Mountains exceeding Cold.

3. There are very many other Mountains between *Peru* and *Brasil*, which also stretch themselves out through the Country of *China* to the *Magellanick streights*, where the high tops of the Hills are perpetually hidden with *Snows*, although they lie under the Latitude of 52 degrees.

The Hills between Peru and Brasil.

4. Add to these Chains of Hills, those of *Canada* and *New-England*, and very many others in *North America*, covered with continual *Snow*, although they are less famous.

The Hills of Canada, and New England.

5. The top of *Taurus*, a Mountain in *Asia*. This was amongst ancient Writers accounted the most noble and greatest Mountain of the World. It riseth up in *Asia Minor*, from the *Pamphilian Sea* nigh to the *Chelidonian Islands*, and thence marcheth along through divers Countries and great Kingdoms under divers Names, from the West into the East, unto *India*, and divideth all *Asia* into two parts, one whereof which looketh to the North is called *Asia* within *Taurus*, and the other which faceth the West is named *Asia* without *Taurus*. It is fenced in on either side with many Companions, amongst which the famous and most notable ones are the greater and the lesser *Anti-Taurus*, which cut and divide the greater and lesser *Armenia* into two parts, where *Taurus* it self passeth between *Armenia* and *Mesopotamia*; it sendeth forth many Arms towards the North and South.

The Mountain Taurus.

6. The Mountain *Imaus* marcheth forth in form of a *Croß* two ways, as well towards the East and West, as towards the North and South. The Northern part is now called *Alkai*. It is stretched out forward towards the South, even to the very ends of the *Indies*, and the fountain heads of the River *Ganges* in length about four hundred *German Miles*. It divideth the *Asian Scythia* into two parts, of which that which looketh on the west is called *Scythia* within the Mountain *Imaus*; but that which beholdeth the East, is named *Scythia* without the Mountain *Imaus*.

The Mountain Imaus.

7. The top of the Mountain *Caucasus* is stretched out from the North to the South towards *Pontus Euxinus*, from the *Caspian Sea* (to whom it is a neighbour) at the breadth of fifty miles, and to those that sail in the *Caspian Sea*; it is an infallible mark to govern and steer their course by: It reacheth to Mount *Ararat* in *Armenia*; where *Noah's Ark* rested, which the *Turks* and *Persians* believe to be there kept to this day. But the Mountains of *Ararat* are neighbours to *Taurus*; because all these Mountains are contiguous. We will speak of the height of *Caucasus* in the Thirtieth Chapter.

The Mountain Caucasus.

8. The Hill of *China*, which embraceth and comprehends the *Damascian Mountains*, so called by the Ancients towards the West, and *Ottorocora* towards the North. This Clift or Chain of Hills consisteth of many Mountains, not indeed continually yoked together, but here and there affording a passage between them. And the Mountains of *Camboja* seem to be a part of that gang of Hills.

The Hill of China.

9. The Hills of *Arabia*, which march forward in a triple rank, of whom the Holy Mount *Sinai* is a part.

The Mountains of Arabia.

The Mount
Atlas.

10. The most famous *Hill*, and which is celebrated with innumerable *figments* of the *Greek Poets*, is Mount *Atlas* in *Africa*. It riseth at the shore of the Western Ocean of *Africa*, and extends it self through all *Africa*, even to the borders of *Egypt*. It hath the *Fountains* and *Springs* of almost all the Rivers of *Africa*; in many places it is full of *Snow* and *Cold*, although it lieth in the *Torrid Zone*.

The Mountains
of the Moon.

11. The Clift of *Africa* nigh to *Monomotapa*, which is called the *Mountains* of the *Moon*. It compalleth in almost all *Monomotapa*; and the *arms* or *branches* thereof are many, as the *Hill Zeth*, and the *Snowy Mountains*. There are found very many, and in a manner innumerable other *yoaks* or *chains* of *Mountains* in *Africa*, severed and disjoyned by a small space, in-fomuch that they are almost all contiguous, and seem to be parts of one Chain of *Hills*.

The Riphean
Mountains of
Europe.

12. The *Riphean Mountains* of *Europe*, which are also called the *Obian Hills*; they march on forward from the *White Sea* or *Muscovian Bay*, to the very mouth of the River *Ob*, and the *Muscovites* call them *Welike Kameypoyas*, that is, the great *Stony Girdle*; because they think that the whole World is girted in with them. There is here another *yoak* of *Hills*, which the *Russians* call *Jogoria*. It beginneth at the Southern boundary of *Tartaria*, and extends it self unto the North Sea, and very many Rivers rise and spring out of this, viz. the Rivers *Wissagda*, *Neem*, *Wissera*, and *Petjora* the greatest of all. Besides a triple *yoak* of *Hills* runneth down between *Siberia* and *Russia*, from the North towards the South. One of them the *Russians* call *Coofvinscoy Camen*, whose breadth or passage is two days Journey. To this some *Valleys* coming in betwixt them, is a second bordering called *Cirgins Key Camen*, also of two days Journey; the third is *Podvins Coy Camen*, the highest of these three *Mountains*, which in many parts throughout the whole year is covered with *Snow* and *Clouds*, and therefore it affordeth a very difficult passage, which is of four days. The City *Vergateria Siberia* is nigh unto it.

The Mountains
of Norway and
Lapland.

13. The *Mountains* of *Norway* and *Lapland*, which begin from the Southern Promontory of *Norway*, and sepearate *Sweden* in part from *Norway*, then in many orders proceed even to the farthest part of *Lapland*, and are distinguished by divers names, as *Fillefiel*, *Dofrefiel*, and the like.

The Mountain
Hercinium in
Germany.

14. In *Germany*, the famous Mountain *Hercinium* encompassing all *Bohemia*, and by various windings extending it self into divers Regions, and that also by various names. In the *Dutchy* of *Brunswick* it retaineth its Ancient appellation, the Mountain *Bructerus* is part of it.

Proposition II.

In most Islands, and in the procurrent parts of the Continent, the Mountains are so situated, that they pass through the middle of the Land, and divide them into two parts.

The division
of Lands by
Mountains.

So in *Scotland* the Mountain *Grampius*, (called by the Inhabitants *Grampaine*) which extendeth through this Island from the East to the West, and divides it in two equal parts, both which differ not only in the nature of the Soyl, but also in the Inhabitants. So in the Islands of *Sumatra*, *Borneo*, *Luconia*, *Celebes*, *Hispaniola*, *Cuba*, Mountains are found, which arise from the Sea-shore by degrees towards the midst of the Islands unto a very great height.

The Mountain
Gatis.

So the Mountains *Gatis* pass through the middle procurrent part of *Asia*, which is called *India*: For they arise from the extremities of *Caucasus*, and proceed to the Promontory of *Corus*, vulgarly called *Cabo de Comerino*, from the North to the South, and so divide this procurrent into two parts, whereof that part which is on this side *Gatis* towards the West, is termed the Region of *Malabar*, and the other beyond the Mountain *Gatis* towards the East the Region of *Choromandel*. This very same ridge of Mountains passeth through the

the other part of *India* which is now called *Bengala*, through the Kingdoms of *Pegu*, *Siam*, and the whole *Gherfensuf* of *Malacca*.

So also the Mountains of the procurrent of Earth termed *Camboja*: The like Mountains are in the *Peninsula* or *Isle* of *California*, in the procurrent *Africa* from the *Lake Zair* to the *Promontory* of *Good-hope*: In the *Peninsula Corea*, the *Apennine* in *Italy*.

How these Mountains came, whether created with the *Earth* it self, or whether they afterwards sprung from natural Causes, is uncertain.

Proposition III.

Of Mountains famous for their exceeding Altitude.

1. *El Pico* in *Teneriff*, esteemed the highest in the whole *World*, whose top is conspicuous at *Sea* 60 miles; there is no ascending up it, but in *July* and *August*, by reason that it is covered all the other part of the *Tear* with *Snow*, although that *Snow* is never seen in the Island it self, or the adjacent *Canary Isles*. The *Vertex* is manifestly discovered to be advanced above the *Clouds*, seeing that these encompass the middle of the Mountain, and the *Vertex* is beheld to be above this *Cloud*; but because it suffereth *Snow*, thence it is certain that it is not protended beyond the middle Region of the *Air*. Three days are required to ascend to the top of this Mountain: for it is not a spiral top, but plain, and the *Air* being serene, and without *Clouds*, one may distinctly discern from it all the other circumjacent *Canary Isles*, of which some are 50 miles remote from it. In those two Months many Sulphureous stones are brought from the Mountain, and carried in great abundance into *Spain*.

The Mountain
of El Pico the
highest in the
world.

2. In one of the *Azores* near to the *Isle Fayal*, there is found a Mountain called *Pico de St. George*, whence the *Isle* is called *Pico*. It is reported to have an equal Altitude with the Mountain of *Teneriff*.

The Mountain
Pico de St.
George.

3. The Mountain called *Cordillera* in the Southern *America*, separating *Peru* from the other *Provinces*, is said to be of that exceeding height, that it giveth place to no Mountain of the *Earth* for Altitude. It extendeth from the *Sireights* of *Magellan* to *Panama*.

The Mountain
Cordillera.

4. *Etna*, a Mountain in *Sicilia*, from the top of which fire is discerned to be ejected in the *Isle* of *Malta*, whence it is supposed to have at the least an intire mile in Altitude: but in the preceeding Chapter we have given a reason of this apparent Altitude.

Mount Etna.

5. *Hecla*, a Mountain of *Iceland*.

Hecla.

6. *Pico de Adam* in the *Isle* of *Ceilam*.

Pico de Adam.

7. The Mountain *Bructerus* in *Germany* and *Abnoba*.

8. The Mountain *Figenojamma* in *Japan*, is supposed to exceed the *Clouds* in Altitude.

Figenojamma.

9. The Mountain *Caucasus* much celebrated by the Ancients for its great height.

Caucasus.

10. The Mountain *Pelion* in *Macedonia*. *Pliny* saith that *Dicaearchus* the Mathematician, by the command and expence of some *Kings*, measured the Altitude of this Mountain, and found it to be 1250 paces, that is, 10 Stadia, or $\frac{1}{2}$ of a German mile. *Geminus* saith that the Mountain *Cyllene* was found by *Dicaearchus* to be of the same Altitude.

The Mountain
Pelion.

11. The Mountain *Atbos* (as *Mela* in *Lib. 2. Chap. 2.* relateth) is so called, that it is believed to rise higher than that *showers* should fall thence. This Opinion received credit, because that the *Alpes* are not washed away from the *Altars* that are on the top of it, but remain in the heap as they were left in. It runneth along with a great broad Ridge into the *Sea*, where it adheareth to the Continent. *Xerxes* making his Expedition against the *Gracians*, dugg it through, and made it Navigable.

The Mountain
Atbos.

12. *Olympus*, a Mountain of *Asia minor*, of which we have spoken in the former Chapter.

Olympus.

13. *Casius*.

Cassius.

13. *Cassius*, a Mountain in *Asia*, which *Pliny* writeth to be four miles in height.

Hemus.

14. *Mount Hemus*, which *Martianus Capella* describeth to be 6 miles in Altitude.

Atlas.

15. *Atlas*, a Mountain in *Africa*, of which we have spoken in the preceding Proposition. The Poets feigned this Mountain to be so high, that it upheld *Heaven*, but experience hath found the contrary.

Proposition IV.

The many differences of Mountains.

In the former Propositions we have shewed three differences, viz.

The differences of Mountains.

1. Some are extended in a long Tract, and some are terminated in a small Circuit.
2. Some divide the Regions in two parts; others pass through any Tract of the Regions.
3. Some are of an exceeding height, some of a mean, and some but low. To these differences these may be added:
4. Some are Sandy, some Rocky, Clay or Chalky.
5. Some include or contain the Springs of Rivers, whereas others are without them.
6. Some are adorned with Woods, and other some destitute of Trees.
7. Some are burning and smoking, whereas others are without fires.
8. Some are rich in Metals, and others without them.
9. And some Mountains are covered with Snow all the Year, whereas others have no Snow at all.

Proposition V.

To enumerate the burning Mountains, and those that cast out flames.

Of Vulcan's or burning Mountains.

Such Mountains at this day are called *Vulcans*, which Appellation the *Portugall Marines* first introduced, and now are commonly so called; and such are

Mount Aetna.

1. The most famous is *Aetna*, a Mountain in *Sicilia*, at this day called *Gebe*, from whose top the ejected flames and smoke are discovered at a long distance in the *Mediterranean Sea*, even to *Malta*, which is 40 German miles. Howbeit that the ejaculation of the flames be continual, yet notwithstanding sometimes it ceaseth with a greater force. In the Year 1537. from the first of May to the twelfth, all *Sicilia* was shaken with an Earthquake, then a great and horrible noise was heard, as if *Canons* had been fired: there followed the destruction of many Edifices throughout the whole Isle, when that this storm had continued for eleven days, the Earth was rent in twain, or opened it self with a vast Gulph, whence a great flame and fire brake forth; by which, within the space of four days, all was consumed and burnt which was not distant above five miles from *Aetna*. A little after the Funnel, which is on the top of the Mountain, for three days cast forth an abundance of Ashes and Coals, which were not only dispersed throughout all the Isle, but also beyond the Seas into *Italy*. And the Ships in the Sea about 200 Leagues distant, steering towards *Venice*, were much damaged. *Farelhus* hath at large described the fires of this Mountain, and doth also say that the foot of it is 100 Italian miles in Circuit. And in Anno 1669. the flames broke forth in a violent manner, to the great damage of the Inhabitants of those parts.

Mount Hecla.

2. *Hecla*, a Mountain of *Iceland*, doth sometimes rage as much as *Aetna*, and cast forth great stones: And continual fires in it wanting a free evacuation, oftentimes send forth noises like unto lamentations; thence many simple people supposed that there was the place of *Hell*, where the Souls of the damned were tormented.

3. *Vesuvius*.

3. *Vesuvius*, at this day *Mont de Somma*, not far from the City of *Naples*; is planted with most fertile Vines, which, without the time of the Conflagration, maketh the best *Falerinum*, but it is obnoxious to frequent burnings. *Dion Cassius* relateth, that in the Time of *Vespasian's* Conflagration, and the force of its flames were so vehement, that the Ashes cast forth from its bottom with the Sulphureous smoke, were not only carried by the wind to *Rome*. But also beyond the *Mediterranean Sea* into *Africa*, even to *Egypt*: moreover, the Birds being suffocated in the Air, fell to the Earth; the Fishes perished in the adjacent, infected warm and frequent water. Concerning this Conflagration, and the sad mutation of the Mountain, there is an excellent Epigram in *Martial*, who lived at that time, and saw the Mountain in its Verdure, and afterwards buried in its Ashes. But then the Conflagration ceasing, and the Showers watering the Sulphureous Embers and Ashes, in the Superficies of the Mountain here and there was great fertility of Wine. But again within these few years this Mountain burned afresh, and sent forth an abundance of Smoke. The adjacent Land was burnt, and became dangerous to Travellers, by reason of the various Pits which the flame caused.

Vesuvius, or Monte de Somma.

4. A Mountain in the Island of *Java*, not far from the City *Panacura*: This in the Year 1586. when it had never burned before, first was rent with a violent eruption of flaming Sulphur, so that about 10000 persons were said to have perished in the neighbouring places; and it ejected exceeding great Stones into the City; and for the space of three days it vomited forth so much black Smoke mixt with Ashes and Embers, that it obscured the face of the Sun, and almost clothed day with nights dark Mantle.

A Mountain in Java worthy of note.

5. *Gonnapi*, a Mountain in one of the Isles of *Banda*. This in the Year 1586. in the Month of April, when that it had burnt for 17 years, was rent with a great noise, and cast forth such an abundance of great Stones of Sulphur and ardent matter on the Sea and Land, that it astonished all persons: The abundance of Ashes and Embers also rendered the Cannons of the *Hollanders* in their Castle unserviceable, such a vast heap overwhelmed them. Vast Stones were found in the Sea, with a multitude of small ones, so that the Barks had scarce a free passage. The water on the shoar so boyled, as if that fire had been placed under it: An abundance of Fishes were killed and seen floating on the water.

The Mountain Gonnapi.

6. *Bataluanum*, a Mountain in the Isle of *Sumatra*, casteth forth Smoke and Flames as *Aetna*.

Bataluanum.

7. In the *Molucco Isles* the Land in many places belcheth forth fire with an huge noise; but it is chiefly noted for the Funnel of *Tarnate*: The Mountain is advanced to the Clouds, and very steep, the lower parts of which are covered with thick Woods, the upper naked by reason of the fire. On the top is the Funnel of a vast wideness, which is in the form of an Amphitheatre with many Circles, the greater including the lesser; thence in the Equinoctials, especially those in the Spring and Autumn, certain Winds blowing, chiefly the Northern, with an horrible noise, Flames mixed with black Smoke and Embers, break forth, and fill all places to a great distance with Ashes. There are annual seasons of seeing it; neither can one ascend but by Ropes or Chains in certain places. Here in some places of this Mountain the Inhabitants gather good Sulphur.

Many places in the Molucco Isles cast forth fire.

8. One of the Islands of *Maurice* (60 Leagues distant from *Moluccoes*) oftentimes the whole Isle is shaken with an Earthquake, and vomiteth Fire and Ashes: and there is so great an abundance of Fire, that whole Mountains and Rocks do burn. Oftentimes fiery Stones break forth of a vast bigness. When the Wind is more vehement, so vast an abundance of Ashes is poured forth, that people labouring in the Fields are forced to return home, being covered with Ashes: those Ashes also kill their living Creatures. From the top of the Mountain this black and dismal Fire breaketh forth with a dreadful noise, like unto Thunder or great Guns: And from thence cometh abundance of Pumice Stones and other Stones burnt in the fire.

9. In

A Mountain in Japan worthy of note.

9. In Japan (as *Massæus* relateth) there is a Mountain which continually vomiteth *Flames*, on the top of which the *Evil Spirit* sheweth himself to certain Persons, after that they have macerated themselves for a Vow sake.

10. Many *Vulcanelloes* are found in the *Isles* of Japan, distant 70 miles from *Ferando*. Also in a certain small *Ile* which lieth between *Tanaxuma*, and the *Isles* called the *Sisters*, a burning Mountain is discovered, at other times smoaking.

Certain Vulcans in the Isle Tendai.

11. In *Tendai*, one of the *Philippine Isles*, where the Promontory of the *Holy Spirit* is, certain *Vulcans* are found: One also in the *Ile Marindique*, another of the *Philippine Isles*.

Vulcan Mountains in Cordillera.

12. In *Nicaragua*, a Province in *America*, a lofty Mountain casteth forth flames in such great abundance, that they may be seen 10 miles distant.

13. In the Ridge of *Peru* called *Cordillera*, here and there are certain *Rocks* and *Vulcan Mountains*, partly smoaking and partly burning, and they are said to cast out fire: Especially in the Province of *Carrapa*, there is a Mountain from whose top, when the *Heaven* is serene, much *smoak* is discovered to be elevated.

Others in Peru.

14. Near to *Arequipa* a City of *Peru*, 90 miles distant from *Lima*, a certain *Sulphureous Mountain* continually ejaculateth fire, which is found dangerous to the City.

15. In *Peru*, near the Valley *Mulaballow*, about 50 Leagues from *Quito*, there is a *Vulcan*, which once rending, cast forth great *Stones*, and terrified also the remote places with the huge noise.

Other Vulcans.

16. In one of the *Islands* which they call *Papays*, which *Le Maire* discovered (except peradventure it may adhere to the *South Continent*) on the *Oriental Coast* of *New Guiney* is a *Vulcan*, which at that time burned.

17. Certain Mountains lying on the *Oriental Shore* of the River *Jenisea*, in the Country of the *Tingesi* beyond *Ob*, towards the East, by a journey of some weeks, there are *Vulcans* as the *Muscovites* do report.

18. Certain Mountains at the River *Pesida* beyond the Region of the *Tingesi*.

A Vulcan in Liburnia.

19. In *Liburnia*, near the City *Apollonia*, is a rocky Mountain, from the top of which continually issueth *smoak* and *flame*. In the Land adjoining there are hot *Fountains*; there are also certain Mountains which have now ceased to burn. So the *Ile Queimoda*, on the *Coast* of *Brasil*, not far from the mouth of the *Silver River*, in time past did burn: so the Mountains in *Congo* or *Angola*, which they term *Vesbrande Bergen*. In the *Isles* of the *Azores*, especially *Tercera* and *St. Michael*, formerly the *Earth* burned in many places, but now the *smoak* in some places is sometimes expelled; hence also they have often *Earthquakes*. The *Isles* of *St. Helena* and of the *Ascension*, have also its *Earth* like unto these, viz. a *Dust*, *Embers*, and *Asbes*, so that in times past it is probably the Mountains of these *Isles* burned, which is also manifest from the *Sulphureous Earth* and *Coals*, which they call *Smitskolen*. Now the cause of these *Vulcans* or burning Mountains, is a *Sulphureous bituminous Substance*, which is contained in such like Mountains.

Proposition VI.

The Tanges of the Mountains, some admit of no passage or opening, some of many, other some of one or another only.

Of the Tanges of the Mountains.

They are called *Portæ* and also *Thermopylae*. Of which the more noted are, 1. The *Thermopylae* in *Phocis*, from which this name was communicated to the rest. 2. The *Caspian Portæ*, which, as through a narrow passage, are admitted into the *Caspian Mountains*. 3. The Port of the Mountain *Cordillera* in *Peru*. 4. The Port of the Mountain which is extended between *Abyssine* and *Arabia Troglodytica*, through which they carry *Provision* and *Grain* from that Region unto this. 5. In *Caucasus* the *Sarmatick* and *Albanian Ports*.

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Proposition VII.

That Mountain is termed a Promontory which runneth forth in a certain Tract to the Sea, or on the Shore is elevated above the adjacent places.

In *Mapps* they are called *Cape's* or *Heads*; among which the more noted are, 1. The *Cape of Good-hope* in *Africa*, which must be passed by those that sail into *India*.

Of Promontories or Capes.

2. *Cape Victoria* in the end of the *Streights* of *Magellan*.

Cape of Good-hope.

3. *Cape Verd* in the Angle or Point of *Africa*, where the *Shore* windeth from West to East.

Cape Victoria. Cape Verd.

4. *Cape Vincent* in *Spain*.

Cape Vincent.

5. The Promontory of *Atlas*, so anciently called, not a *Cape*, because that *Mariners* some Ages past supposed that it could not be passable; or that if any one had sailed beyond it, yet he could not return back safe: therefore this was the bound of their Navigation on the Coast of *Africa*. Other Promontories may be seen in the *Mapps*.

Promontory or Cape of Atlas.

Proposition VIII.

Unto Mountains are opposed Caves and deep Abysses, which are found in few places of the Earth.

In times past that *Mephitick Cave* in *Island*, called the *Cave* of *St. Patrick*, and that *Cave* in *Italy*, called *Grotta del Cane*, was famous. In the Mountain of *Fessano Beni Guazeval*, is a *Cave* that vomiteth forth fire.

Of Caves or Deep Abysses.

In the *Island Baruch*, adjoining to *Wales* in *England*, near the *Sea* is a *Rock*, in which there is a *Cave*, unto which if you apply your ear, a noise like strokes of *Hammers* upon *Iron*, as in a *Smith's shop*, may be heard.

Not far from the City *Bessa* in *Aquitain*, is a *Cave*, vulgarly called *Du Souley*, in which, in the *Summer* season, a noise is heard like unto *Thunder*.

In many places betwixt the midst of the Mountains, there are found *Valleys* so profound, that they strike the Beholders with horror, and cause a giddiness.

CHAP. XI.

Of Mines, Woods, and Desarts.

Mines, Woods, and Desarts do ennoble certain Parts or Tracts of the Earth, concerning which, although little can be propos'd, yet for an exact knowledge of the Terrestrial Superficies, it will not be unnecessary to consider those Places, and to design the Tracts and Limits of them; which we shall briefly perform in this Chapter.

Proposition I.

A Mine is a place in the Earth from which Metals, Minerals, or other sorts of Earth are dug.

But because what is dug up out of the Earth is various, therefore all these Mines receive various denominations, as *Mines of Gold, Silver, Copper, Iron, Marble, Mines of precious Stones*, and the like.

The most famous of the *Gold and Silver Mines* are those of *Peru* and *Columbia Aurea*, the richest in the world; for throughout all the *Provinces of Peru* are found *Mines* abounding with *Gold and Silver* (yet not excluding the other Metals); so that the *Natives of Peru*, and the *Spaniards* in times past did boast that the Ground or Soyl of this Kingdom was *Gold and Silver*. *Girava*, a *Spanish Writer* testifieth, at the City *Quito* are *Mines* which yield more *Gold* than *Earth*; therefore when that the *Spaniards* first arrived in this golden Kingdom (which for that reason they have fortified with strong Castles and Forts) in many Cities, especially the *Regal City*, called *Cusco*, they behold many Houses spread within and without with Plates of *Gold*. The most rich Mine of *Silver* is in the Mountain *Potosi*, in which 20000 men are employ'd to digg the *Earth*, descending by at least 400 steps, and by these Mines the *King of Spain* receiveth a vast Revenue annually; to the envy of all other *Emperours and Potentates*.

2. The most excellent *Silver Mines* are in the *Isles of Japan*, hence termed by the *Spaniards* the *Silver Islands*. There are also *Mines of Gold* found there, but now less rich than formerly.

3. *Arabia* had more abundance of *Mines of Gold*, than at this day.

4. In the mountainous parts of *Persia*, as also in *China* there are certain *Mines of Silver*.

5. In *Guinea* are many Mountains producing *Gold*, but yet remote from the shore. The *Gold* is not dug up that cometh from thence, but is gathered by other ways. Every one of their *Kings* are said to have their proper *Mines*, and sell the *Gold*, for which the *Europeans* give in exchange other Commodities.

6. In *Monomatapa* there are found rich *Mines of Gold and Silver*, as also in *Angola*.

7. Of all the *Provinces of Europe*, *Germany* is the most rich in abundance of *Mines*, whereof some afford some little *Gold*, divers *Silver*, and very many *Copper, Iron, Lead, Vitriol, Antimony*, and the like.

8. In many parts of *England* are rich *Mines of Lead and Tin*, which are found very profitable to the Kingdom, not only by that which is used here at home, but also by the great quantities which are transported to other Countries. Likewise *Mines of Iron, Coals*, some of *Silver*, &c.

9. *Sweden* hath the most rich *Copper Mine* of any hitherto known, in a vast Mountain which they call *Den Copperberg*: such a great quantity of *Copper* is dugg, that it is said to make up the third part of the *King's Revenue*. There are also *Mines of Silver and Iron*, but they hardly discharge the expences in digging it.

10. Mines

10. *Mines of Jewels* are found in the Island of *Ceiland*, where there is also a *Silver Mine*, and a great *Marble Mine*.

11. In the *Region of Chili* are rich *Mines of Jewels*, as also of *Silver and Gold*, but the warlike *Natives* having more esteem to *Iron Weapons* than to *Gold and Silver*, have vanquished the *Spaniards* and demolished the *Mines*.

12. In the *Isle of Madagascar*, *Iron and Gold* doth much abound; there is a moderate quantity of *Silver*, little *Gold*, no *Lead*; whence it cometh to pass that the *Natives* more value *leadens dishes and spoons*, than those of *silver*.

13. In the *Isle of Sumatra*, they write, that there are large *Mines of Gold, Silver, Brass, and Iron*, inasmuch that their *King* in the Year 1620. had by him 1000 l. weight of *Gold*.

14. In the *Philippine Isles, Java, Hispaniola, Cuba*, and the rest, *Histories* record that *Mines of Gold, Silver, Copper, and Iron* are found. In the Mountains of *Siam* also they relate that *Gold, Silver, and Tin* are found.

15. *Mines of Salt* are found in *Poland* at *Pochnam*, four miles from *Cracovia*, where they cut of huge lumps of lucid and white *Salt* from the *Earth*. In *Transylvania*; in the County of *Triol*; in *Spain*; in *Asia minor*; in *Kilifim* a Mountain of *Persia*; in places near the *Caspian Sea*, not far from the *River Volga*, where is the Island *Kostowata*. Hence the *Russians* digg their *Salt*, and boyle it up to a more pure Substance, and transport it throughout all *Russia*. There is a salt Mountain in *Cuba*. All the Mountains of the *Isles of Ormus* in the entrance of the *Persian Gulph*, consist of a *Christalline salt*; yea, the whole *Isle* is almost nothing else but *salt*, out of which they make the *Walls* of their Houses. In *Africa* there is no other salt but what is dugg out of the salt paris of *Caves*, as *Marble* is, of a white, red, and ashy colour. In *Peru*, 80 miles from *Lima*, in a certain Valley great plenty of *Salt* is found, whence every one may take what they please, because it continually encreaseth, neither doth it seem possible ever to be exhausted. In the Kingdom of *Musulipatan*, near the City *Baganaga*, great abundance of salt is dugg up, whence all the *Indians* fetch it. Of salt fountains we shall speak in another Chapter.

Proposition II.

A Wood is a multitude of Trees stretched forth in a long and continued Tract of Earth, and propagated without any Culture, or dressing and planting.

Most Woods have only Trees of one sort, and are denominated from them; and seeing that there is great variety of Trees; there are also various differences of Woods, as a Wood consisting of *Palm-trees*, is termed *Palmetum*; of *Oak, Quercetum*, and the like. Although these terms are frequently used for Groves or less Woods. But they are divers in several Regions, especially in those more remote. In *Africa* at *Cape Verd*, are Woods of *Citrian* and *Orange-trees*, such as are also found in other places. In *France* are whole Woods of *Chesnut-trees*. In the *Isle of Ceiland* are Trees whose bark doth afford *Cinamon*. In *Banda* are *Nuces Muscatae*. In *Brasil* are Woods of Trees called *Brasil* of great use for *Dyers*. In *Madagascar* are *Tamerind Trees*, as also in other places. *Cedars* on Mount *Lebanus*, of which whole Woods are also found in *Japan*, so that they use them for *Masts for Ships*. In *Spain, France, and Italy* are *Olive and Mistle Trees*. In *Germany* the Woods consist of *Beech, Oak, Alder, Pine, Juniper, Maple, Firr, Ash, and Elm*. The most noted Woods or Forests are, that of *Hercinia*, which in times past almost overspread all *Germany*; part of it is the *Bohemian Wood*, and *Bacen* or *Semana* in the *Dukedom of Brunswick, Gabrata, Martiana*, and others. In *England* the Woods consist of *Oak, Elm, Ash, Beech, and Maple Trees*. In *Scotland* the famous Wood called *Caledonia*, and others in other places, especially in *Norway*, where there is an abundance of vast Trees above all other Countries in *Europe*, called *Firr Trees*, whence all the *Masts of Ships* almost throughout *Europe* are made. *Lithuania* hath almost nought else but Trees, whence the *King of Poland* hath a great Revenue.

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Proposition III.

Deserts are vast Tracts of Land not inhabited by man.

Of Deserts

They are twofold; those properly so termed, and those improperly: The former are those whose soil or earth is sterile: The latter, which indeed is fertile, but not inhabited by man, as in many places in *Muscovia* about the *Caspian Sea*, from the shore of *Volga*, are many fertile and fat *Fields* which lie uncultivated, and chiefly by reason of the sloath of the *Inhabitants*; as also by reason of the *Wars of Tamerlane*, by which those *Countries* were depopulated: but these are less properly termed *Deserts*. Of those properly so termed, these are most noted, which may be divided into four kinds, *viz.* *Sandy, Ericose, Stony, and Marish or Boggy Deserts*: Those that are *Ericose* have for the most part here and there in many places *Woods and Forests*, are the more useful, and easier to be cultivated.

1. All the *Deserts of Africa* are almost *Sandy*, neither is any part of the Earth more pestered with *Deserts*; the greatest are found in *Lybia*; they also encompass all *Egypt*.

2. The *Deserts of Arabia* are partly *Sandy* and partly *Stony*; but the most famous is that *Sandy Desert* in *Arabia*, termed vulgarly the *Sandy Sea*.

3. The *Deserts of Tartaria* about the Mountain *Imaus*: Also the *Desert Belgian* about the *Moguls*, where hitherto it hath been (though falsely) believed, that the rich Kingdom of *Cathaie* is seated.

4. The *Deserts of Camboia*.

5. The *Deserts of Nova Zembla*, which are rocky.

6. The *Deserts of Norway, Lapland, Sweden, and Finmarch*.

7. All the *Deserts of Germany* are *Ericose*, they term them *Een Heide*, whence they call the *Desert* in the *Dutchy of Luneburgh*.

8. The *Deserts of America*, and the like.

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Absolute Geography.

S E C T. IV.

Containing the Hydrography or the description of the Water, explained in Six Chapters.

C H A P. XII.

Of the division of the Ocean throughout the Earth.



Y reason that we have treated in the precedent Chapters of the *division* of the parts of the *Earth*, order requireth that we contemplate the *division* and *scituation* of the *Waters*, which compose the other part of the *Earth*, and also take a survey of their *Properties* which do appertain unto *Geography*. In *Chapter VII. Proposition II.* we distributed the *Waters* into four sorts; which are, 1. *The Ocean*; 2. *Rivers and Fountains of Fresh-waters*; 3. *Lakes and Marishes*; and 4. *Mineral Waters*. In this Chapter we shall treat of the *division* of the *Ocean*.

The division of the Ocean.

Proposition I.

The Ocean in a continued tract encompasseth the whole Earth, and the Terrestrial parts, neither is the Superficies of the same anywhere altogether interrupted by the Lands interposed; but the more large continuity and free congress is only impeded.

The truth of the *Proposition* can only be proved by Experience, especially from the *Circumnavigation* of the *Earth*, which hath now for a long while been so often attempted, and happily performed first by the *Spaniards*, under the conduct of *Magellan*, who first found out the *Streights*: then by the *English* twice,

twice,

twice, *viz.* under *Drake* and *Cavendish*; and lastly, five times by the *Hollanders*.

The *Ancients* nothing doubting of this continuity, by reason that they accounted the Old World only for the extant *Earth*, and thought it on every side to be encompassed by the *Ocean*; yea some supposed it to float. But when that *America* was detected (which is extended from North to South in a very long tract, and impeded the continuity of the *Ocean*;) and moreover the *Polar Land* North and South, then not undeservedly was it doubted concerning it: For many supposed, and that not without probability, that *America* and the *South Continent* were conjoined, as many *Geographers* now think, that the *Northern America* is contiguous to *Greenland*; which two, if both true, the *Ocean* could not encompass the whole *Earth*. But in truth *Magellan* removed the doubt, when in the Year 1520 he found out the *Streights* between *America* and the *South Continent*; by which it was manifest that the *Pacifick Ocean* was joyned with the *Atlantick*. What therefore the *Ancients* imagined from a false Opinion that they knew, that we know from infallible Experience. The like hapned with *Africa*, for then also the *Ancients* without any hesitation placed the *Ocean* without or beyond it, and thought *Africa* to be extended beyond the *Equator* in a far less space than in truth it is; but when the *Portugals* had sailed the Coast of *Africa*, and had found vast Lands in a long tract beyond the *Equator*; and then also it was questioned whether *Africa* could be failed about, that they might sail into *India*; that is, whether it were encompassed with the *Ocean*? This doubt was removed by *Vasques Gamma*, under whose conduct in Anno 1497. *Africa* was first sailed about, the Promontory of *Good Hope* being found to be the ultimate bound of the same towards the South; which appellation it received from the King of *Portugal* in Anno 1494, when that *Diaz*, which first related concerning (although he passed it not, *Victuals* failing him, and the *Tempests* forcing his Return) the storm and raging *Ocean* of this Promontory, and spake much more to the King.

Proposition II.

The difference in the parts of the *Ocean*, which ariseth from the *Earth*, is threefold; or the *Water* of the *Ocean* may be divided into three kinds, which are, 1. The particular *Ocean* or *Seas*; 2. The *Bays* of the *Sea* or *Ocean*; and 3. The *Streights*.

The word *Ocean* is taken in a twofold acceptation: Sometimes for the whole *Ocean* or *Water*, which encompasseth the *Earth*; sometimes, and that frequently, for any part of the large *Ocean*, which adhereth to another part by a large tract, and that from on both sides: So we say the *Atlantick Ocean*, the *German*, the *Ethiopic*, the *Indian*, and the *Chinesan Oceans*. In this latter signification by use of Speech we sometimes use the word, although we sometimes call a part of the entire *Ocean* the *Sea*; but by reason of the homonymie of the word *Mare*, or *Sea*, which shall be explained by and by, the word *Ocean* is usually used in that sense.

A *Sinus* or *Bay* of the *Sea* is said to be a part of the *Sea* or *Water* which runneth between two *Lands* from the *Sea*, or some other *Bay* until it stop at some Land. It is also commonly termed a *Sea*.

A *Freium* or *Streight* is a part of the *Ocean*, or part of a *Bay* of the *Ocean* or *Sea*, running between two *Lands* in a narrow tract, and conjoining of two *Seas*, or conjoined with the *Sea* from both extremities, by which they sail from one *Sea* into another.

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Proposition III.

We reckon four principal *Oceans*, or great parts of the whole *Ocean* of *Seas*, in respect of the situation of the four *Continents* or *Quarters* of the *Earth*.

1. The *Atlantick Ocean* is that part of the *Ocean* which is situated between the Occidental Coast of the Old World, and the Oriental of the New. It is vulgarly termed *Mare del Nord*, or the *North Sea*; but improperly, seeing that it extendeth itself beyond the *Equator* towards the South. It is more aptly divided into two parts, one from the *Equator* towards the North, the other stretcheth towards the South. It hath therefore on the Eastern quarter, the Occidental Coast of the Old World, and on the Western, the Oriental Coast of *America*. Towards the North it conjoyneth with the *Hyperboreal*, or *Northern Ocean*; and towards the South with the *Southern Ocean*.
2. The *Pacifick Ocean* lieth between the Occidental Coast of *America* and *Asia*, in a long tract, even to the *Isles of India* and to *China*.
3. The *Hyperboreal Ocean* about the *North Polar Land*.
4. The *Southern Ocean* about the *South Continent*, part of which *Ocean* is the *Indian Ocean*.

Other *Geographers* make the four parts of the *Ocean* by another difference or division; one of which they make the *Atlantick*, but extend it not beyond the *Equator*; for here they begin the second, which they call the *Ethiopic*: For the third they reckon the *Pacifick* with us; the fourth they make to be the *Indian Ocean*. But we in our division have regard unto the four great *Continents* of the *Earth*, or to the greatest *Isles*: We may make three parts, *viz.* the *Atlantick*, the *Pacifick*, and the *Indian Ocean*; but then we extend the *Atlantick* further. The matter is of no great moment, so that either may be chosen: for this division rather dependeth on our Invention, than on Nature.

Proposition IV.

The parts of the *Ocean* receive denominations from the names of the *Lands* they pass by.

So we say the *Cantabrian*, the *British*, *German*, *Indian*, *Chinesan Ocean*, and the like.

Proposition V.

The *Bays* of the *Ocean* are twofold, long, and broad; they are also twofold in another respect, to wit, primarily, and secondarily; they begin from the *Ocean*, these from another *Bay*; or they are a part of the primary *Bay*. The long primary are these:

1. The *Mediterranean Sea*, it breaketh in from the *Ocean* between *Spain* and *Barbary*, and for a long space runneth between *Europe* and *Africa*, even to *Syria*, *Asia Minor*, and *Thrace*. It is called the *Internal Sea*. It maketh many secundary *Bays*, *viz.* the *Adriatick* (Gulph of *Venice*), the *Bay of Thesalonica*, the *Aegean Sea*, and the like.

As for the *Euxine Sea* we may doubt, whether it may be said to be a part of this primary *Sinus*, of which see Chapter Fifteen.

The *Mediterranean Sea* is distinguished by divers Names, taken from various Regions that it watereth; for towards the North it hath *Spain*, *France*, *Italy*, *Sicilie*, *Illyricum*, *Greece*, *Creet*, *Thrace*, and *Asia minor*; towards the South *Morocco*, *Fes*, *Tunis*, *Algier*, *Tripoli* and *Egypt*. Thence are the Names of the *Iberian*, *Gallick*, *Liguistic*, *Sicilian*, *Balearian*, and *Cretian Sea*. It is extended from the *West* to the *East*.

2. The

Baltick Sea.

2. The *Baltick Sea*, or *Sinus Codanus*, breaketh in from the Ocean between the Lands betwixt *Zeland* and *Futland*; first it floweth by a long way from the North to the South, and then reflecting by a long space it runneth forth to the North, between the Provinces of *Germany*, *Megapolis*, *Pomerania*, *Cassubia*, *Borussia*, *Livonia*, &c. from one side, viz. the Oriental quarter. On the Occidental quarter it hath *Sweden* and *Lapland*. It maketh three secondary Bays, whereof two are long, viz. the *Botnick* and *Finnick*; the third is broad, viz. the *Livonick*. It receiveth Rivers of great Magnitude.

The Red Sea.

3. The *Red Sea*, *Arabian Gulph*, or Sea of *Mecca*, floweth from the Indian Ocean between the Promontory of *Arabia* to the City *Aden*, and between the Promontory of *Africa*, and runneth between *Africa* towards the West, and *Arabia* towards the East: it stoppeth at the *Isthmus of Africa* at the City *Suez*, where is the station or harbour of the *Turkish Navy*; it receiveth very few Rivers, and those of small Magnitude: but none from *Africa*, as some observe. It extendeth from the South quarter of the East, to the collateral quarter of the North quarter towards the West.

The Persian Gulph.

4. The *Persian Gulph* runneth between *Arabia* and *Persia* from the Indian Ocean, about the Isle of *Ormus*. It hath *Persia* on the East, and *Arabia* on the West: it stoppeth at *Chaldea*. It extendeth from East and by South to the West and by North quarter; and receiveth very few Rivers except *Euphrates* and *Tigris*, long before conjoynd.

The Bay of California.

5. The *Sinus* or Bay of *California*, *Mer Vermejo*, runneth between *California* and the Occidental Coast of *Mexico* from the South towards the North: it is terminated at the unknown Province of *America Tatoteac*: It receiveth few Rivers. The Modern Mariners affirm *California* to be an Isle; and if so, this tract of Water cannot be a *Sinus*, *Gulph*, or Bay, but a *Streight*.

The Bay of Nankin.

6. The Bay of *Nankin*, runneth between *Corea* and the Coast of *China* and *Tartary* unto the Northern parts of *Tartary*, where *Tenduc* the Kingdom of *Cathay* is placed; yet fallly as those suppose, who will have *Corea* to be an Isle. It receiveth few Rivers: it extendeth from West to North.

These are the long Gulphs, unto which lesser may be added; as the Gulph of *Cambaia*, and others. The four last rehearsed do not afford secondary Gulphs, viz. *Arabia*, *Persia*, *California*, and *Nankin*, but only the *Mediterranean* and *Baltick*.

Proposition VI.

Broad Gulphs are in number Seven, viz.

Gulph of Mexico.

1. The Gulph of *Mexico* floweth from the *Atlantick Ocean*, between the North and South parts of *America*, which it separateth from the Oriental quarter to the Occidental. It stoppeth at a long *Isthmus* between those Lands; which impedeth the conjunction of the *Pacifick* and *Atlantick Ocean* on this quarter. It receiveth many Rivers, and for multitude of Isles may compare with the *Hegean Sea*.

Gulph of Ganges.

2. The Gulph of *Ganges*, (Gulph of *Bengala*) floweth between *India* and the *Chersonesus of Malacca*, from the *Indian Ocean*: it stoppeth at the Kingdoms of *India*, *Bengala*, *Pegu*, and others. It receiveth noted Rivers, besides the *Ganges*.

The Gulph Lantchidolium.

3. The Gulph between *Malacca* and *Camboja*, not far from the Gulph of *Bengala*, and likewise floweth from the South towards the North: it stoppeth at the Kingdom of *Siam*.

4. The *Russian Gulph*, or *White Sea*, floweth from the North Ocean, between *Lapland* and the utmost Coasts of *Russia*, towards the South: it is terminated partly at *Finland*, and partly at the Kingdom of *Moscovia*: it maketh a certain small long Gulph, which is extended to *Lapland*; where is that noted and well frequented Mart *Archangelo*. It receiveth eminent Rivers,

5, 6. The

5, 6. The Gulph *Lantchidolium* floweth from the *Indian Ocean*, between the Provinces of the South Country *Beach* and *New Guiney*: it stretcheth from the North to the South, and terminateth at the unknown parts of the South Continent.

Another Gulph is near unto it towards the West, between *Beach* and the other procurrent Land of the South, where is the Land called *Anthoonij à Diemen*, which is the Name of a *Dutch Master* of a Ship by whom it was discovered.

7. *Hudson's Sea* is a Gulph between *New France* and *Canada*, and other parts of the Northern *America*; it is terminated at *Esotiland*.

Proposition VII.

Fretum, or *Streights* are threefold. For either they conjoin the Ocean with the Ocean; or the Ocean with a Gulph; or a Gulph with a Gulph.

We will enumerate fifteen, whereof three are of most note.

1. The *Streights* of *Magellan* of a very long Tract; it conjoineth the *Atlantick Ocean* with the *Pacifick*, and affordeth a passage from one into the other. The *Longitude* of it from East to West is 110 miles: the *Latitude* is various, sometimes two miles, sometimes one, and sometimes a quarter of a mile. *Magellan* was the first that found it, and sailed it in Anno 1500: its *Latitude* from the *Equator* is 52 degrees 30 minutes. On the North it hath *Chica*, a Province in South *America*: On the South the Isles of *Magellan* and *Terra del Fuego*.

2. Near unto this is *Fretum le Maire*, between the South Continent and the Isles of *Magellan*; through that the way is far shorter through the Ocean of *Atlas* into the *Pacifick Sea*. It is distant from the *Equator* 54 degrees 30 minutes.

3. The *Streight* of *Manilhas* extended between *Luconia*, *Mindanao*, and other *Philippine Isles*; it is reported to be 100 Leagues. It is dangerous to Ships by reason of the abundance of *Sands*. It is extended from the East to the West. It conjoineth the *Pacifick Ocean* with the *Indian* on that part, albeit there be more free conjunctions in the *Vicine*.

4. There be many *Streights* among the *Indian Isles*, as also between the Isles and *Vicine Continents*. As first between *Ceylan* and *India*. 2. Between *Sumatra* and *Malacca*. 3. Between *Sumatra* and *Banda*.

5. *Waigats Streights*, through which there is a passage from the North or *Russian Sea* into the *Tartarian Ocean*, but as yet is stopped with Ice, at least from the Europeans. It lieth between *Samojeda* and *Nova Zembla*.

6. The *Glacick Streights* between *Nova Zembla* and *Spitzberga*, or by another name termed *Terra Polar*.

7. *Davies Streights* between *Groenland* and the Northern *America*; but the Exit of it is not yet discovered, and therefore it is doubted whether it be a *Streight* or a *Gulph*.

8. *Forbischers Streights* afford a way to the *Atlantick Ocean*, if not by the *Pacifick Ocean*, yet at least by *Hudson's Passage*.

9. The *Streights* of *Anian* between North *America* and *Tartaria*, through which there is a passage from the *Tartarian Ocean* into the *Pacifick*; but as yet uncertain. But yet that there is some *Streight* between the North part of *America* and *Tartaria*; and also another between *America* and *Groenland*, skilful Mariners do hence collect, because that in that part of the *Pacifick Sea*, which lieth between *Tartaria* and the Occidental Coast of the Northern *America*, 70 miles from *Japan* to *America*, the names of the Sea, and motion of the same is from the North, and West and by North, although divers winds, or those from another quarter do blow; but for 100 miles before that Shore of *New Spain*, those floods and motions cease altogether, for they are carried to some open *Streight* beyond *New Spain*, situated towards the North. Add more.

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moreover, that in those 70 miles, many Whales and Fishes which the Spaniards call *Albacores*, *Bonetos*, and *Arum* are found, which kind of Fishes, for the most part, move about *Streights*; so that it is probable that they come from the *Streights* of *Anian* into this part of the *Pacifick Ocean*, seeing that they are not found in any part of the *Ocean*. But very many of the Moderns altogether deny this *Streight*, and place the wide *Ocean* between *Tartaria*, *Corea*, and *America*.

Straits of Gaditanum.

10. The *Streights* of *Gaditanum*, *Herculeum*, or of *Gibraltar*, through which the *Atlantick Ocean* floweth into the *Mediterranean Streight*: The least *Latitude* is about one mile; the *Longitude* greater. It lieth between *Spain* and *Africa*. Writers affirm that in times past there was no such *Streight*, but that it proceeded from the *Oceans* breaking through into the *Land*.

The Sound.

11. The *Streights* of *Denmark*, or the *Sound*, lie between *Zeland* and *Scandia*; through it the *Atlantick Ocean* floweth into the *Baltick Sea*. The *Latitude* is about a mile where it is narrowest. Unto this *Streight* we must add another between *Zeland* and *Funen*; and a third between *Funen* and *Jutland*, called the *Belt*.

Arabian Gulph

12. The Mouth of the *Arabian Gulph*; it is near the *Emporium Aden*, through which there is a passage from the *Indian Ocean* into the *Red-Sea*.

Persian Gulph.

13. The *Streights* of the *Persian Gulph*, yet improperly so termed, by reason that the entrance is no more narrow than the *Gulph* it self.

The Hellespont.

14. The *Hellespont*, a *Streight* sufficiently famous amongst the *Greeks*, through which there is a passage from the *Euxine Sea* into the *Propontis*. Near unto this is another *Streight* termed the *Thracian Bosphorus*, by which they say from the *Propontis* into the *Hegean Sea*.

15. The *Streights* between *Sicily* and *Italy*.
Thus have we explained the differences of the Parts of the *Ocean* existing from the scituation of the *Land*, as in the eighth *Chapter* we have shewed the differences of the *Lands* proceeding from the *Oceans* flowing between. For the more facile retaining of the same, it will be advantageous to have a prospect or *periplus* of the *Maritinate Coast* of the *Lands* and *Traet* of the *Ocean*.

For the more easie remembrance of the scituation of the Parts of the *Earth*, it will be necessary to know the *Shores* of the *Continents* of the *Maritime Coasts*, and their conjunction; also the conjunction and scituation of the Parts of the *Sea*.

The Periplus of the Maritime Coasts of the old world.

The *Periplus* of the *Maritime Coast* of the *Old World* is that which comprehendeth *Europe*, *Asia*, and *Africa*. The bound of the same towards the North is *Waigats Streights*; hence therefore it is best to begin. The Province of *Samojeda* adjoyneth to *Waigats Streights*, and in proceeding forwards towards the West of *Muscovia*, where also the *Land* by a *Gulph* made receiveth the *white Sea* from the North: Then *Lapland* and the *Coast* of *Norway* towards the West, lying from the North to the South. Here a bending being made towards the East, the *Coast* of *Scania* and *Gotland*, where another bending being made, whose other *Coast* is *Jutland*, receiveth the *Sea*, which is called the *Baltick Sea*, flowing to *Swedeland*, *Finland*, *Livonia*, *Borussia*, *Cassubia*, *Pomerania*, *Megapolis*, *Holsatia*, and *Jutland*. Then followeth the other *Coast* of *Jutland* and *Holsatia*, *Friesland*, *Holland*, *Zeland* (where the *Sea* is termed the *German Sea*) *France* and *Spain*. Here again is a divarication, and a *Gulph* being made, the *Internal Sea* is received in and floweth by *Spain*, *France*, *Italy*, *Illyricum*, *Græcia*, *Thracia*, *Asia Minor*, *Egypt* and *Barbary*, where at *Morocco*, the *Shore* again is opposite to the *Spanish Coast*; and afterwards followeth the *Occidental shore* of *Africa* at *Cape Verd*, where the *Coast* bendeth to the East, viz. here is *Guiney*, *Angola*, *Congo*, towards the South at the *Cape of Good-hope*, where again the *Shore* bendeth towards the North, *Mozambique*, *Soffala*, and a *Gulph* is made for the *Red-sea*: then followeth the *Coast* of *Arabia*; here the *Coasts* of the *Persian Gulph*; and towards the East, the *Coast* of *Persia*, *Cambaja*, *Indostan*, *India*, *Malacca*, *Bengala*, *Camboja*, *China*, *Tartary* at *Corea*, or the *Streight* of *Anian*,

Anian, whence by or through the Northern Coast of *Tartary* and *Samojedia*, you return to *Waigats Streights*.

The *Circumscription* or *Periplus* of *America* is thus:

We begin from the *Shore* of *Davies Streights*, whence in a *Gulph* being made, the *Sea* named from *Hudson* is received. Here by a reflexion are the *Coasts* of *Estotiland*, *New-England*, *New-France*, *Virginia*, *Florida*, *Mexico*, the *American Isthmus*, *Castelle del Oro*, *Guiana*, *Caribana*, *Brazilia*: Here the *Coasts* of the *Streights* of *Magellan* looking towards the South, but extended from the East to the West: hence from the South to the North runneth the *Shore* of *Chili*, *Peru*, the *American Isthmus*, *Mexico*, where at *California*, the *Sea* of *Vermejo* is received in a *Gulph*; hence the *Coast* of *California* *New-England*, *Quivira*, *Anian*, where are the *Coasts* of the *Streights* of *Anian*, which now they deny, and follow unknown *Shores*, which are extended to the *Streights* of *Davies*.

The Periplus of America.

The *Circumscription* of the *North Polary Land* is thus: From *Davies Streights* the *Coasts* of *Groenland* do begin, which run a little towards the South, and then return to the North, and are termed the *Coasts* of *Spitzberg*.

Then the *Shore* runneth from the Region of *Nova Zembla*, and is opposite to the *Tartarian Ocean*; where the other *Coasts*, even to *Davies Streights*, are unknown.

The *Periplus* of the *Land* of *Magellan* is thus: The *Coast* beginneth from the *Streights* of *Magellan* or *Le Maire*, and making divers windings to the *Region Beach*, where the *Lantchilonium Sea* is received in a *Streight*: hence the *Coasts* of *New-Guiney* run forward to the North, and then return to the South, then they go strait on to the *Streights* of *Magellan*. Thus the *Periplus* of the *Land* is finished.

The Periplus of the Land of Magellan.

Now let us take a prospect of the *Circumscription* of the *Ocean*: We will make entrance between *Davies Streights* and *Nova Zembla*; and here is the *Hyperborean Sea*, the *Frozen Sea*, the *Caledonian* or *Sea* of *Groenland*: then it runneth between the *Coast* of *Europe* and *America*, and is called the *British Sea*, the *Danish Sea* (where it maketh a *Gulph*) the *German*, *French*, *Spanish*, (where it maketh the *Mediterranean* and *Sea* of *Mexico*) the *Atlantick* in part, here, viz. where it runneth between the *Coasts* of *Brasil* and *Africa*, by and by it is called *Ethiopia*; and the *Streights* of *Magellan* on one side enter in, from the other Eastern quarter is the *Indian* and *South-sea*, where it is extended between *Africa* and the *Land* of *Magellan*, then between *Asia* and the same *Land* of *Magellan*, and cometh into the *Pacifick Sea*, which is extended to the *Streights* of *Waigats* and *Anian*; and to the South *Streight* of *Magellan* (by the middle of which it is joyned to the *Atlantick*) it directly tendeth to the *Oriental Coast* of *America*, *Chili*, *Peru*, *Mexico*, *California*, *New-England*.

To these I should subjoyn two *Tables*, whereof one containeth the division of the Parts of the *Earth*; the other the division of the Parts of the *Ocean*, but having made use of the former in the eighth *Chapter*, I omit it here, and only make use of the latter, viz. the Parts of the *Ocean*.

1. The OCEAN, whose chief parts are four,

1. The Atlantick, Mer del Nord, following with the Ethiopick Sea, between Europe and Africa on the one part, and America on the other, obtaineth divers Names, according to the parts; as the

Ethiopick	}	Ocean:
British,		
French,		
2. The Pacifick Ocean, Mer del Zur, between the extream parts of Asia, the Indian Isles, and the Occidental Coast of America.
3. The North Ocean, about the North Continent, the

Tartarian,	}	Ocean,
Hyperborean,		
Frozen		
4. The South Ocean, about the Land of Magellan, part of which is the Indian Sea.

1. The Mediterranean, The Iberian, Sicilian, Cretan Sea, &c. running between Africa and the Regions of Europe, whose parts are many,

The secondary Gulphs,	}	Ocean,
which are		
The Bay of Corinth, &c.		
2. The Baltick Ocean, whence Livonia, Bornia, as that of Finmarke.
3. The Gulph of Arabia, between Africa and Arabia.
4. The Persian Gulph, between Arabia and Persia.
5. The Gulph of California, between California and New Granada.
6. The Gulph of Corea, between Corea and the utmost bounds of Tartaria and China.

1. The Gulph of Mexico, between the North and South America.
 2. The Gulph of Bengala, between the Coasts of Indostan and Malacca.
 3. The Gulph between Malacca and Camboja.
 4. The White Sea from the North Ocean, between Lapland and the utmost Coasts of Moscovia.
 5. The Lanchidol Sea, between the Beach and New Guiny of the Land of Magellan.
 6. Hudsons Sea, between New France and Canada, arising from the Northern Ocean.
- These want Streights.

1. Magellan, by which you come from the Atlantick or Ethiopick into the Pacifick; and this is the longest Streight of all others.
2. Le Maire, near to that of Magellan, and of the same use.
3. Waigats, by which you sail from the North Ocean into the Tartarian.
4. Anian, by which you sail from the Tartarian into the Pacifick Ocean; which is now denied.
5. Davis and Forbischers, by which you sail from the Atlantick into the Tartarian or Pacifick.
6. Nova Zembla, by which a way might be granted from the Hyperborean and Frozen-Sea into the Tartarian, but that the Ice doth hinder.
7. Gibraltar, by which a passage is from the Atlantick into the Mediterranean.
8. Denmarke, (or the Sound) by which you pass out of the Atlantick into the Baltick Sea.
9. The Mouth of the Arabian Sea, by which you arrive in the Arabian Gulph.
10. The Mouth of the Persian Sea, by which you come into the Persian Gulph.
11. The Hellespont and Bosporus, by which you come from the Aegean Sea into the Sea of Pontus.

As concerning the Caspian Sea, whether that it be peculiar, or whether that it belongeth to the broad Gulphs of the Ocean, of which it is a subterranean passage, is yet doubted.

CHAP.

C H A P. XIII.

Of some Properties of the Ocean, and its Parts.

Proposition I.

The Superficies of the Ocean, and all Liquid Bodies, is Rotund, Spherical, or else is part of a Spherical Superficies, whose Center is the same with that of the whole Earth or Land.

The verity of this Theorem is manifest from those Arguments, by which we proved in the third Chapter, that the Superficies of the Earth is Spherical, which is true concerning the Water as the Earth, as I have there proved. But because those probations only conclude *a posteriori*, I here therefore determine to make demonstration *a priori*, by which Archimedes proved concerning all Liquid Bodies that the superficies was spherical, this supposed as a thing certain, consisting in the Earth, or in part of the Earth. For Archimedes supposeth in his demonstration three things; 1. In the middle of it the Earth hath some kind of Center, and therefore is of a spherical figure. 2. That this is the nature of all liquid bodies, that the parts of them lying equally, or in an equal distance from the Center of the Earth, and continuous amongst themselves, the lesser pressed is expelled by the more pressed, which he sheweth from experience. 3. That every part of a liquid body is pressed by the liquid body above it, to the Perpendicular in respect of the Center of the Earth, if so be that this liquid body be descending or pressed by some other body. Besides these three Suppositions, Archimedes useth a certain Geometrical Proposition, which is not found demonstrated in the Elements, and therefore he demonstrateth the same, which is this: If any superficies be cut from whatsoever places passing through one point, and every section be the periphery of the Circle, having that point its Center, this superficies is spherical; whose Center shall be the point named. Now this is very easie to shew: For let the superficies of any body be cut through the point D in the plain I F K E P, and let the line of the section I F K E P be the periphery of the Circle, having it for its Center, and in every section made by D, let the periphery of the Circle, having the Center D, be found. We must shew that this superficies is spherical, and D is its Center, D its point, that is, all the points of this line are equally distant from the point D; for we may conceive as many right lines as we will draw from the point D to the other points of the proposed superficies. Therefore these must be demonstrated to be equal mutually one to the other, let any one of those drawn from D to the superficies be taken, and through that and through the right line DF let a plain be drawn, this plain therefore cutting the superficies will make the periphery according to the Hypothesis: wherefore that being drawn, shall be equal to the right line DF, and so we shall shew concerning all drawn from the point D, that they are equal to DF it self, by reason that they are all mutually equal one to another: from whence we infer, that this superficies is spherical, having for a Center the point D: for a spherical superficies is a crooked superficies, within which is a certain point, from whence all the right lines being drawn are equal at the superficies.

This premised, the spherical superficies of every liquid body is demonstrated in this manner: Let any consisting matter be E F G H, let D be the Center of the Earth, and let us conceive this liquor to be cut in a plain passage through D; let the section made on the superficies of the liquor be the line E F G H: but we must first shew that this line E F G H is crooked, viz. the periphery or arch of the periphery of the Circle whose Center is D: But if it may be brought to pass, that there may be no such periphery, the right lines drawn from D to that will be unequal: let the unequal drawn lines be DE, DG, to wit, DG will be greater than DE, and let DG be the greatest of all which are drawn from

The demonstration of Archimedes.

See Scheme.

The Earth is divided into Land and Waters. The Water is divided into Rivers, Lakes, Marshes, and the continued Ocean or Sea is distinguished through the Lands by these differences.

2. BAYS, or GULPHS.

Long; whereof there are six, to wit,

Broad or Wide, as

from D, and let DE be the least: let the other right line DF be drawn twice cutting the Angle GDE at EFGH, so that this line DF shall be greater than DE, but less than DG: then let the periphery or arch of the Circle IFKH be described in the Center D, the internal DE in this same plain, the periphery of which will cut the right line DE protracted beyond the point E, viz. in the point I, but the right line DG on this side G, viz. in the point K.

Moreover, in the Center D, the interval DL, which is lesser than DE, let the periphery or arch LMN be described beneath or within the liquor in the plain IFKH; therefore the parts of the liquor contained within DLN, or about the periphery LMN by an equal distance are placed, and are continuous from the Center D; but those parts which are about MN are more pressed than those that are about LM, because they are pressed by a greater weight, viz. a greater quantity of water being above them, than those at LM.

Therefore the parts near LM being less pressed, are expelled from the parts near MN, and these shall possess their place, neither shall the liquor consist; but let the liquor be supposed to consist and be quiet, there shall be then a liquor consisting, and not consisting which will be absurd: wherefore the right lines drawn from D to the line EFGH are not unequal, but equal, and therefore the line EFGH is the Arch of the Periphery of the Circle, whose Center is D. The same is the demonstration concerning all places cutting the Superficies of the Liquors, and passing through D, viz. it will shew the Section of the Arch of the Periphery of the Circle of the Center D. Now by reason that the Superficies of Liquors is such, that if it be cut by Planes in any sort passing by D, the Section may always be the Periphery of the Circle: Therefore it followeth from the aforesaid demonstrated Proposition, that the Superficies of Liquors is Spherical, having the Center the point D, which is the Center of the Earth; therefore the Superficies of the Ocean is Spherical, having the same Center, which is the Center of the Earth; which will also be manifest from the confirmation of the following Proposition.

Proposition II.

The Ocean is not of a greater height than the Shores of the Earth are, and therefore the Earth and Water are almost of the same Altitude, high Mountains excepted.

The truth of this Proposition is demonstrated from the former Proposition: For if the Superficies of the Ocean be Spherical, and of the same Center with the Superficies of the Earth, and the Sea be no higher about the Shores than the Earth, therefore neither shall the middle of the Ocean be higher than the Earth, but its Superficies with the Superficies of the other shall make one and the same Spherical Superficies: But without the former Proposition we shall shew this Theorem a posteriori after this manner, as the preceding Proposition may be shewed from this, if that they confide not in the former demonstration by reason of the assumed Hypothesis.

1. Experience testifieth that Water being free, and not hindered, doth flow from more high places to places more low: If therefore the place about the Shore was not so high as in the middle of the Ocean, part of the Sea would flow from the middle of the Ocean to the Shore, and would neither consist or be calm, which yet is not found in the tranquillity of the Air.

2. If that the Ocean far remote from the Shores, were more high than the Sea at the Shore, that Altitude would be discovered a far longer interval, than a Spherical Superficies doth admit of; yea, it would be seen from the same distance from which the parts of the Ocean intercepted between that Altitude and the Shore are seen. And experience testifieth, that it cannot be beheld from a greater distance, but that by degrees the more remote part is detected after the more near, when we come to Mediterranean places to the Shore: And by

The Earth and Water are almost of the same Altitude.

by how much any part is more vicine to the shore, by so much it is first, or by a larger interval beheld from the shore: Therefore the part of the Ocean removed from the shore is not higher than that part that is nigh unto it. Wherefore the Ocean is of the same Altitude every where, both in the middle, and at the shore, and not higher than the Earth.

3. Mariners in the midst of the Ocean and deep Sea, although they apply their Mathematical Instruments, yet find it no higher there than in the parts near the shore: which certainly could not be, if that the Sea had any Altitude elevated as a Tower or Mountain. For as by Instruments we find the Altitude of Towers or Mountains above the subjected parts of the Earth, so also if that there were any Altitude of the middle Ocean above the vicine parts, it could not be obstructed, and avoid the subtilty of Instruments.

4. Also here and there in the middle of the Ocean are found Islands, and that in great number in some parts, which are near to the Continents or great Islands: Therefore the middle of the Ocean is not higher than the Earth, because it is not higher than the Shores of those Islands.

5. No cause can be shew'd, why Water in the middle of the Ocean should be higher, and not flow into the Channels of Rivers, if that their Waters be more depressed: For by experience we find that Water any where situated moveth to the vicine parts, and these are less high, which have been the cause of so many inundations.

From these I think we sufficiently collect, that the Waters of the Ocean are not higher than the shoars of the Land. Seeing therefore the Altitude of very few shoars is elevated little more than the vicine Mediterranean Land, and in most lesser, seeing that the Altitude of the Lands from the shoars to the Mediterranean places increaseth and riseth into Hills; thence we conclude, that the Superficies of the Ocean is not higher than the Superficies of the Land. Now that the Altitude of the Land from the shoars to the Mediterranean places augmenteth, or that the Mediterranean places are higher than the shoars, is proved from the flux of Rivers, most of which arise in Mediterranean places, and flow to the Ocean. So then at least the Mediterranean parts are somewhat more elevated than the shoars, because the flux is from these unto them; for Water floweth from the more high parts to places more inferior. Now that some are somewhat depressed lower than the Water, we shall not go about to deny; but they are either defended by the height of their shoars, or by banks or other interposed earth. Now these Banks are raised for the most part, not because of the great Altitude of the Ocean, being tranquillous and in its natural state; but by reason of its impetuous motion, caused by the Winds, or from some other cause.

Corollary. Therefore they are deceived who will have the Waters of the Ocean to be higher than the Earth, and lie to a miraculous providence, by which the inundation of the Ocean on the Land and drowning of the World is hindered and restrained: For we have shewed, that the Superficies of the Water and Earth are one and almost the same, to wit, spherical; and that many parts of the Earth, at least the shoars, have a greater Altitude than the middle of the Ocean, and that this is the cause that the Ocean cannot overflow the Lands. Which greater Altitude, if it be elevated in some shoars, the Banks being broken, or the Water being augmented or forced to them in great abundance, cause inundations. Neither is it altogether impossible or contrary to nature, that the whole Earth should be covered with Water, as we shall shew in the end of the Chapter.

Corollary.

Proposition

Proposition III.

Why the Sea being beheld from the shoar, seemeth to arise in a greater Altitude and tumor, by how much it is more remote.

The middle of the Ocean, by some said to be many miles higher than the Shoars.

It is a fallacy of the sight, or of the estimating faculty, which hath brought many into this error: so that they have endeavoured to defend, that the middle of the Ocean is many miles higher than the Shoars. But it is a wonder that none of them have taken notice of daily Experiments in the ordinary course of our life, in which this fallacy is sufficiently manifest: For if that we look on any Pavement or floor stretched at length, or any row of Pillars, the more remote parts of the Pavement will appear more high than the vicine parts, so that from thence, from our place to the most remote, the Floor will seem by degrees more and more to elevate; which yet notwithstanding it is every where of the same Altitude. After the same mode it is with the Waters of the Ocean; for if on the Shoar you use a Geodetical Instrument, commodious to measure places withal, you shall find no elevation of the remote part of the Ocean above the Shoar, but rather a little depression; so that the Waters sink beneath the Horizon of the Shoars.

See Scheme.

Those that are verfed in the Opticks declare the cause of the fallacy: Let A be the Eye, and let it survey the pavement or superficies of the Water extended at length unto the long space a c. Let the Angle a A c be divided into equal parts or four Angles, which are c A d, d A c, c A b, b A a from the right drawn A b, A c, A d, to wit, the more remote shall be far more great, as appeareth from the Diagram, viz. e d is greater than d c, and d c greater than b c, and b c than a h. Although these parts are very unequal, yet they will appear equal, because they appear under the equal Angles a A b, b A c, c A d, d A c, and the Estimative faculty will judge them to be removed an equal distance from the Eye A (in which there is a great deception) and therefore will judge the lines A b, A c, A d, A e, to be A f, A g, A h, A k, as they are equal a b, f g, g h, h k; whence the parts b c, c d, d e seem elevated, as if they were f g, g h, h k. Or more briefly, because the Eye is more elevated to behold Objects remote, than it is depressed at things near; therefore remote things are judged to be elevated, and those nigh, depressed: or because we compare the elevation of our Eye to parts vicine, therefore we judge them depressed; but we cannot so compare the elevation of our Eye to parts remote, wherefore they seem more elevated than in truth they are.

So therefore we see from this, that the Ocean, to one that beholdeth it from the Shoar, seemeth higher, by how much it is the more remote; from thence, I say, it is no probation that it is more elevated.

Some render another Reason, viz. that therefore a greater Altitude is to be attributed to the middle of the Ocean than to the Earth, by reason that they suppose that otherwise it cannot come to pass, that water should flow from the Ocean to Fountains of Rivers; which Fountains are in Mediterranean planes, seeing that no water floweth, but from an higher place unto one more low depressed. But I shall shew it to be performed by another way in the Chapter where I treat of the Original of Rivers or Fountains.

And so also any one may infer, that the Mountain of Teneriff is not so high (as also other Mountains) as to be beheld in the Ocean for so long an interval at four degrees, except that the foot of the Mountain or the Ocean be higher than the Sea at the Shoar of Teneriff. But what Answer is to be returned to this is manifest from the Eleventh Chapter, where we have treated of the Original or heights of Mountains.

Proposition

Proposition IV.

To exhibit the cause and Original of Gulphs, Bays, and Streights of the Ocean.

These Bays in proper manner of Speech are the Sinus of the Land, not of the Ocean, but rather Arms, branches, and procurent parts of the Ocean: But more properly we may term those to be sinus or Bays of the Ocean, where the Ocean receiveth into it self Peninsulas of the Earth; as where it receiveth Jutland, the Chersonesus of Malacca, California, and the like.

But the usual mode of Speech hath so obtained, that contrary to the nature of things, the word is so taken in the first signification, and a Sinus or Bay of the Ocean is the same with a branch or procurent part of the Ocean.

The cause of these Sinus or Bays is, by reason that the extant parts of the Earth are in some places mutually rent from one another and divaricated; so that the part of the Earth interposed between the divaricated parts, is more depressed than the superficies of the Ocean; therefore the water always tending to the more depressed part, floweth into the divaricated parts, and runneth forward so far until it meeteth the elevation of the Earth: for here it can go no farther, and therefore it receiveth its end or bound.

The same is the cause of the Streights of the Ocean or Sea. The cause of the separation or divarication of the parts of the Earth (which is required to the existence of Bays and Streights) is the violent motion of the Sea, when it is forced by Winds or some other cause: which seeing that it is done almost every day, so that it beateth the Lands with its waves, thence it cometh to pass that in progress of time, in some parts of the Shoars the Land is so shaken, that it falleth on the rushing in of the Ocean, and maketh way for it: and if the Land adjoining to the Shoar be depressed, Bays do more easily arise, viz. when the Land of the Shoar is broken through, the water will overflow the adjacent Lands, and so make a Bay, if that the land be so depressed, or consist of so much matter, which may easily be removed by the violent waves.

And so it is manifest, that Bays and Streights may be made and exist anew; but thence we may not conclude, that all Bays and Streights that are at this day were so generated: for it may be that some existed with the Earth it self or Ocean, and therefore coeval with the very Ocean. For there is no record of the making of any new Bay of the Sea or Streight, although the Ancient Grecians fabulously reported such concerning the generation of the Gaditan or Herculean Streights; viz. they said, that the Mountain Calpe on the Spanish Coast, and the Mountain Abyla on the African Coast were one Mountain, but separated by Hercules; whence they called these Mountains Hercules Pillars, and the Streights, Hercules Streights.

But as concerning the Streights between Sicily and Italy, which the Ancients believed to be caused by an incursion of the Sea, we ought less to doubt, that such small Streights should be generated; for we deny not, but such like may be generated at this day. Also Bays may be made of Streights, and Streights may become Bays: For Example, If that either of the Mouths of Magellans Streights, or of the Streights of Manillas should be obstructed, those Streights would become long Bays: on the contrary, if that the Isthmus between Asia and Africa should be taken away, then the whole Red Sea would become a Streight, through which a Ship might sail from the Indian Ocean into the Mediterranean Sea.

The cause of Gulphs, Bays, and Streights in the Ocean.

The cause of Bays.

The Streights between Sicily and Italy.

Proposition V.

Whether the Ocean every where be of the same Altitude.

That all the parts of the Ocean are of the same Altitude, being in its natural constitution, and all impediments removed, is manifest from the first

first Proposition, by which we shewed, that the *superficies* of the *Ocean* is *spherical*, and that its *Center* is the *Center* of the *Earth*: hence it plainly followeth, that it must be of the same *Altitude* in all its parts. But here is a doubt, whether there be not some causes that may render some parts of the *Ocean* more high than other? This is most worthy of consideration, and is also of great moment, when we consult concerning the digging through of *Isthmuses*, and conjoyning parts of the *Sea*.

Many will have, that the *Ocean* and *Earth* is higher about the North, and lower about the *Equator*. So *Aristotle*, lib. 2. *De Cælo*, Cap. 2. they alledge this Reason, That the *Ocean* seemeth to flow from the North *Regions*, as from a Fountain. But we cannot conclude any thing certain from this: for whether the Northern *Lands* (especially the North *Channels*) be more high or lower than the *Channels* of the *Lands* near the *Equator* is yet doubted: neither is it sufficiently proved from the motion, because this is not general, or is not found in all the Northern *Regions*. And if this motion of the *Ocean* from the North should be granted, yet thence it would not follow, that the *Ocean* was there higher, for to avoid this excess of *Altitude*, the *Ocean* floweth from those places towards the *Equator*.

Now the original of the Opinion concerning the greater *Altitude* of the North *Land*, more than of others, seemeth to spring hence, because that the face being turned to the North, we discover the *Pole* elevated above the *Horizon* and our place; and therefore the *Pole* of the *Earth*, and the vicine tracts of the *Land*, in their supposition, is higher than other *Regions*.

Some determine the *Indian Ocean* between *Africa* and *India* to be higher than the *Atlantick Ocean*, which they endeavour to prove from the *Bay*, viz. the *Arabian* and *Mediterranean*: where also the doubt is to be considered, Whether the *Altitude* of the *Bay* be the same with that of the *Ocean*, or lesser, especially in the extrem parts of the *Bay*, and chiefly in those *Bays* which are joyned by a narrower *Streight* of the *Ocean*.

But it is not improbable but that the *Atlantick* and *Indian Ocean* are higher than the *Mediterranean Bay*, especially in the extreame parts of this at *Asia Minor* and *Egypt*. For the *Atlantick Ocean* floweth through the *Streights* of *Gades* into the *Mediterranean Bay*, and it is probable that the *Altitude* of the *Ocean* is somewhat greater than that of the *Streight*, because a free Influx is impeded in these. Here indeed will be a small difference, but then proceeding forwards in so long and large a tract between *Europe* and *Africa*, the depression of this *Bay* will seem to be made greater than that of the *Ocean*, especially when it meeteth many *Rocks*, *Islands*, and *procurrent Lands*, which repel the current *Water*, and therefore either diminish or beat back the Influx. Yea, if that be true, which is reported by credible Authors concerning *Sesostris* King of *Egypt*, *Darius*, and other *Egyptian Kings*, we ought no longer to doubt of this inequality of *Altitude*: For those Kings attempted to draw a Trench or Channel from the *Red-sea* into the *Nile*, so that by this passage a Navigation might be performed from the *Indian* and *Red-sea* through *Egypt*, and hence through the mouths of the *Nile* into the *Mediterranean Sea*, which would have offered great profit and conveniency to many *Regions* of the *Mediterranean Bay*: But they were forced to leave their enterprise, when it was discovered by those that were skilful, that the *Red-sea* was much higher than the interior *Egypt*. Now if the *Red-sea* be higher than the *Land* of *Egypt*, it will also be higher than the *Water* of the *Nile*, and by consequence than the mouths of the *Nile*, and then the *Mediterranean Sea* it self, for that the water of the *Nile* is not of a lesser *Altitude* than the *Mediterranean*, is hence manifest that it floweth into it; wherefore the *Red-sea*, and therefore also the *Indian Sea* is higher than the *Mediterranean*, at least at the extrem parts of it about *Egypt*, *Syria*, *Thrace*, and in the *Ægean Sea*.

More-

Moreover, other *Egyptian Kings* in times past, and of late the *Egyptian Sultans* and *Turkish Emperors* have consulted how to digg through the *Isthmus*, which conjoyning *Africa* and *Asia*, disjoyneth the *Mediterranean* and *Red-sea*: but the reason why they proceeded not, is reported to have been the *Altitude* of the *Indian* and *Red-sea* above the *Mediterranean*, and the *Coasts* adjacent to it, and therefore they feared least that the water flowing from the *Red-sea* should overflow and drown the *Regions* of those *Coasts*, especially *Egypt*, concerning whose low situation all Writers do consent.

If therefore the *Isthmus* between the *Red-sea*, and the *Mediterranean* should be cut or dugg through, then by an open passage the *Indian Ocean* would immit much water into the *Mediterranean Bay*; but whether it could let in so great a quantity that there should be any danger of an inundation of the *Regions* adjacent to the *Mediterranean Sea*, I doubt: For peradventure it may be thus; if that the *Indian Ocean* should let in somewhat overmuch, then the *Atlantick Ocean* would let in less through the *Streights* of *Gades*, from whose *Altitude* somewhat would be detracted, if that the motion were made from the *Indian Sea* into the *Mediterranean*.

But although I deny not but that this may be, yet I suppose that the *Egyptian Sultans*, and the *Turks* were moved by other reasons, and Political Causes for the omitting the digging through of this *Isthmus*. As

1. The vast expence, it being forty *German miles*, and the *Earth* rocky, also banks must have been made by the advice of skilful *Artists*, which they wanted.

2. They supposed that the *Inhabitants* of the *Christian* part of the *World*, as the *English*, *French*, *Dutch*, *Italians*, &c. would have reaped more benefit by that means than they themselves: For then through that *Streight* they might have sailed into *Persia* and *India*, whereas now they fetch a vast circuit compassing all *Africa*, and have laden themselves with their rich *Commodities*, which they are now contented to have at *Aleppo*, being thither brought on *Camels* through the *Turks Territories*, and in many places receive *customs* for the same, which is no small benefit unto them.

3. That the *Sultans* and *Turks* knew that the *Christians* excelled in the abundance of warlike *Ships*, which they were deficient in, and therefore feared least they should be invaded by a strong *Navy*, which might land a powerful *Army*, and so over-run their *Country*.

These were necessary to be explained concerning the *Altitude* of the *Mediterranean Sea* compared with the *Red-sea*, the *Atlantick* and *Indian Ocean*, by reason that some thence take occasion to maintain, that the *Altitude* of the parts of the *Ocean* is divers.

But we may confirm them also by another example, if that we may compare small matters with great. The *German Ocean*, which is part of the *Atlantick*, flowing between *Friesland* and *Holland* into a *Bay*, which although it be small in respect of the more noted *Bays* of the *Sea*; yet it is also called a *Sea*, and watereth the *Empory Amsterdam*. Not far from thence is the *Lake Harlame*, which is also termed the *Sea of Harlame*, whose *Altitude* is no less than the *Altitude* of that *Belgick Bay*, which we have spoken of, and sendeth a branch into the *City of Leyden*, where it divaricateth into many *Trenches*. Now seeing that neither this *Lake*, nor that of the *Belgick Sea*, do cause the inundation of the adjacent *Lands*; it is thence manifest that they are not higher than the *Lands* of *Holland*: But the *Inhabitants* of *Leyden* have experimentally found, the *German Ocean* to be higher than these *Lands*, when they undertook to make a Trench or Channel from this *City* to the *Coasts* of the *German Ocean* near the *Town of the Catti*, (it is the space of two miles) that they might sail through this Channel, the *Sea* being conveyed into the *German Ocean*, and hence into various parts of the *Earth*; but when that they had perfected a great part of the Channel, they were compelled to desist, by reason that at length they found by observation that the water of the *German Ocean* was higher than the *Land* of *Leyden*, and the *Shores* of this *Ocean*; therefore the *German Ocean* is higher than the *Belgick Bay*.

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But

The Water of the German Ocean higher than the Land.

Reasons why the Egyptian Sultans and Turks did not digg a passage through the Isthmus.

See Maslwin in his third Book of his Indian History.

The Isthmus, which conjoyneth Asia and Africa, endeavoured to be cut by the Egyptian Sultans.

The Indian and Atlantick Ocean higher than the Mediterranean.

But we must esteem otherwise of those *Bays* which flow between the *Lands*, not by an oblong, but by a broad tract, as the *Bays* or *Gulphs* of *Mexico*, *Bengala*, and others; that these are of the same *Altitude* with the *Ocean*, from which they are separated by no strait passages, is not to be doubted of. Although I am not ignorant, that the *Spaniards* formerly did question this latter, (*viz.* whether the *Pacifick Ocean* were higher than the *Bay* of *Mexico*) when they consulted of digging through the *American Isthmus*, or that of *Panama*, that they might have a free and convenient passage from the *Bay of Mexico* to *Peru*, *China*, and the *Indian Isles*, *viz.* the *Spaniards* feared least the *English*, *Dutch*, and other Nations should use this *Streight*, and stop the mouth of it, and so invade *Peru*.

See Proposition.

Wherefore to conclude, it seemeth that we must determine that all the parts and broad *Bays* of the *Ocean* are all of the same *Altitude* (as the first *Proposition* proveth;) but that the long *Gulphs* or *Bays*, especially those let in through an angust *Channel* or *Streight* are somewhat more low, chiefly in the extream parts. Concerning which yet I could wish that more diligent Observations were made, *viz.* these are the doubts, 1. Whether the *Indian*, *Atlantic* and *Pacifick Ocean* be of the same *Altitude*; or whether the *Indian* or *Pacifick* be higher than the *Atlantic*? 2. Whether the *Northern Ocean*, properly so called, *viz.* that which is near to the *Pole*, or in the *frigid Zone*, be higher than the *Atlantic Ocean*. 3. Whether the *Red Sea* be higher than the *Mediterranean*? 4. Whether the *Pacifick* be higher than the *Gulph of Mexico*? 5. Whether the *Baltick Ocean* be equally as high as the *Atlantic*? The same should be observed concerning *Hudsons Bay*, *Streights of Magellan*, and such other. Concerning the *Euxine Sea*, we shall treat in the fifteenth Chapter.

The continual flux and reflux of the *Sea*, and other fluxes, altogether cause the divers *Altitudes* of the parts of the *Ocean*, and in the same part in a diverse time and hours of the day. But these are external causes, and we at present only consider the natural constitution of the *Water*: moreover they do not so vary the *Altitude* in the *Ocean* it self, as it appeareth at the *Shoars*.

Corollary. Therefore we cannot assent to *Pappyrus*, *Fabianus* and *Cleomedes*, which made the greatest *Altitude* of the *Ocean* to be fifteen *stadia*'s, (half a *German* mile) except we must take their Opinion concerning the profundity, and so *Altitude* is ill placed there for profundity.

Proposition VI.

The depth of the *Sea* or *Ocean*, in most parts may be sounded by the *Lead* or *Plummet*; there being very few places whose bottom hath not been yet found out.

The depth of the Sea in most places may be sounded.

The profundity of the *Ocean* is various, according to the more or less depression of the *Channels* it is found $\frac{1}{10}$ of a mile, $\frac{1}{20}$, $\frac{1}{30}$, $\frac{1}{40}$; in very few places about a *German* mile, where they have not line enough to sound the depth, albeit here it be probable that it is not terminated at any vast distance. But yet we deny not, but that in the profound *Channels* there be as it were some hollowneses.

The profundity of the *Sea* is far lesser in the *Sinus* or *Bays*, than in the *Ocean*, which *Channel* is less profound or hollowed by reason of the vicinity of the *Land*; as for the same reason the *Ocean* is less deep at the *Shoar*, than in places more remote from the *Land*, which hapneth only by reason of the hollow figure of its *Channels*.

Of the Mariners Plummet.

Mariners sound the profundity with a *Plummet* of *Lead* in form of a *Pyramid* of about 12 pound weight, if that the line be of three or four pound, such as is sufficient unto 200 *perches*, although others require a *plumb* of more weight. Yet there may be a deceit in this Observation, if so be that the line being snatched by the *Vortices* of the waters, or *waters* themselves do not descend perpendicularly, but obliquely.

But

But where the profundity of the *Ocean* is so great, that neither *Cables* or *Chains* are sufficient is uncertain, although some have invented something for finding out of this: For they determine, that you must observe how much time passeth in the space whilst a *Plummet* of noted weight descendeth to the profundity of the *Sea*: Then you must apply a *Cork* or *Alder-pith* to the *Plummet*, or a blown-up *Bladder*, so that this may presently be separated from the *lead*, when that the *lead* hath hit the bottom of the *Sea*, and so an application being made, the *lead* must be let down again to the bottom, and the time must be noted until the *Cork* return to the superficies of the *Sea*. From this Observation, if it be compared with the observations made in another place, they suppose that the profundity of the *Ocean* may be found by the use of some *Canons*: But the uncertainty of the *Rules*, and the fallacy of the *Observations*, and the so great brevity of time is such, that I think the knowledge of the depth can never be obtained by this method. Yet this is sufficiently manifest, that the depth of the *Ocean* is no where infinite, but every where hath a bottom: For seeing that the *Earth* it self is not infinite, but round, and in a figure returning into it self, it is manifest that the profundity of the *Ocean* is not infinite; neither doth it extend from one part of the superficies through the *Center* to the opposite superficies, so that it may separate the parts of the *Earth* mutually from one another, because the *Earth* is heavier than the *Water*, and therefore the parts of the *Earth*, if that they were separated by the interceding *Earth*, yet presently would be conjoynd again.

But from the profundity observed hitherto in most places it is manifest, that it is almost equal to the *Altitude* of the *Mountains* and *Mediterranean places* above the *shoar*, *viz.* as much as these are elevated, and are extant above the *Horizon* of the *shoar*, so much are the *Channels* of the *Sea* depressed beneath it; or as much as the *Earth* riseth from the *shoars* towards the *Mediterranean places*, so much by degrees more and more is it depressed, even unto the places of the middle of the *Ocean*, where for the most part is the greatest depth. The profundity is changed sometimes in this, sometimes in that part, for divers reasons; 1. By reason of the flux and reflux: 2. With the increase and decrease of the *Moon*: 3. From the *Winds*: 4. From the ruin or subdency of the *Channels* or *Shoars*; also if that the bottom of the *Channel* be made higher in progress of time by the fall of the *Sand* or *Mud*.

Proposition VII.

The *Ocean* hath no *Fountains*, but is contained within the Cavities of the *Earth*; yet it doth not remain always the same.

Experience testifieth, that *waters* of *Rivers* proceed from *Fountains* or *Springs*; and because that this hath been for so many *Centuries* of years, it thence necessarily followeth, that that *water* which continually floweth from the *Springs* to the *Sea*, returneth through subterranean passages, or some other ways to the same *Fountain*. After the same manner there were *Philosophers* in Old time said, that the *Sea* sprang from certain *Fountains*. Neither could the magnitude and perpetuity of the *Ocean* withdraw them from this Opinion; for they said, that it returned unto the same *Fountains* by some hollownes of the *Earth*, or by some other mode, that so they might render a cause of the perpetual flux. This Opinion may be answered after this manner: If that the *Ocean* have *Fountains*, they must either be in the extant part of the *Earth*, or in that part which is covered by the *Ocean*, that is, in the very *Channel* or bottom of the *Ocean*; but they are not in the extant part of the *Earth*, for Men have no where found them. Neither may you object, That peradventure they are in the unknown *Lands* of the *North* or *South*: for this would be a part of high confidence to require that to be granted, which carrieth no weight of reason with it, especially seeing, that at not a few of the *Northern lands* the *Sea* is found frozen up with *Ice*, and in most of those

The Ocean hath no Fountains.

those *Regions*, hitherto discovered, no Springs are found: Therefore the *Fountains* of the *Ocean* are not in the extant part of the *Earth*. It remaineth that we prove, that they are neither in the part of the *Earth* covered with *waters*, that is, in the bosome of the *Sea*. If that they were in this, there would be no more distance from the *Center* of the *Earth*, than the *waters* of the *Ocean* it self, and therefore there would be no *flux* from them, but the water would rest in them, whose nature it is not to be moved from places depressed to places more high: For the *Fountains* of all *Rivers* are more elevated than the *waters* that they send forth.

But some may object, That this is a violent motion, because that the Channel of the *Ocean*, and the *Land* is perforated within with many hollowneses and pits, call them what you please, which proceed for a long Tract under the *Earth*, until they are let into some other place of the Channel of the *Ocean*: So that there are two Orifices of these Channels, which may have a sufficient great Latitude and Extension within the *Earth*, going forth into the Channel of the *Ocean*; therefore it may be, that the water from the *Ocean* may flow into one of these two Orifices, and some forth of the other, as from a *Fountain*, which may be illustrated by an easie *Diagram*: And by that reason that nothing hindreth but that there may be many of these subterraneous passages, and no absurdity thence followeth; therefore it may seem probable to some that there are many of these *Fountains* in the very Channel of the *Sea*. But this imagination is vain, and not agreeable to the properties of water; for water having fallen into either of these Channels would not go forth by the other Orifice, but would rest filled in it, (except moved by some violent cause): For although water should be pressed and stirred, by water forcing in on the Orifice, yet it could not exonerate it self by the other Orifice, because that water incumbeth on this Orifice also, no less than the incumbent water at the former Orifice, which may thus be proved by experience. Let there be in any Vessel water ABCD, AB is the superficies of the water lying equally and spherically, but let in a stick RPEF into the middle of the vessel, which may perforate it by an oblique passage, so that the part of the vessel A shall be higher than the whole of the part of the vessel B, therefore the water, as well on the part A as on the part B, should, for example, flow through gh into this passage, and fill it up, and should not be effused through either of the Orifices, not through g, because this is higher; nor through h, because though it be more depressed than g; yet the water flowing from the part E, and perpendicularly tending to the bottom of the vessel, would prohibit the influx.

From these it is manifest, that the *Ocean* hath no *Fountain*, but is perpetually contained within its own Channel.

See Scheme.

Objections.

But somewhat may be objected against this, which is worthy of consideration: First, That at some part or other of the *Ocean* there is always a violent external moving cause, as *Winds*, *Fluxes*, *Refluxes*, mutations of the *Earth*, and the like. Therefore these cause, that sometimes in some one part of the *Ocean*, and sometimes in another, there is a greater *Altitude*, and abundance of water, than in the other parts; and therefore that higher water falling into the *subterraneous passages*, is again poured forth into another part of the Channel of the *Ocean*, where there is a lesser *Altitude* of water by reason of that external cause, and where the incumbent water then less resisteth the eruption or efflux, because it is moved another way by an external cause: for although this may be, yet it cannot be proved by experience, neither can the contrary, that is this, be demonstrated to be so; therefore at least the truth is uncertain, and we must doubt concerning this Problem. Now that there are such *subterraneous pits* or *passages* in the Channel of the *Ocean* cannot be denied, and those places of the *Ocean* seem to shew them, to wit, where there is an immense profundity, seeing there is no such in the vicine parts. To this I answer, although we should admit of those *subterraneous passages*, yet therefore it doth not follow that we

we

we should grant, that they proceed to another part of the Channel of the *Ocean*, or go forth into it: and if that this should be granted, yet seeing that there are no such passages in all places, and that these external causes sometimes are predominat in one part of the *Ocean*, and sometimes in another there is no consequence from the objection, that the *Fountains* of the *Ocean* are in any certain place, but that it floweth sometimes from one part of the Channel, and sometimes from another; so that that *flux* continueth no longer than the external cause continueth.

2. Some one may thus seem to argue: The *flux* of the *Ocean* is perpetually discerned from the Northern Land or quarter toward the South, between *Europe* and the Northern *America*; also between *Asia* and the Northern *America*. Yet notwithstanding, no part of the *Ocean* or vicine place is to be found whereby it may come unto those Northern *Regions*. Seeing that therefore this *flux* is perpetual, neither doth the water come by a manifest way unto those *Regions*, whence the *flux* is made, therefore it seemeth necessary to conclude, that the *waters* come through *subterraneous passages* unto those Northern *Regions*, and so there to be effused from the holes of the Channel, as from a *spring*, and that the water moveth hence towards the South. There falleth in another cause taken from the former: For the water of the *Ocean* in the *Torrid Zone* is more heavy than that in the Northern places, by reason of the great abundance of *Salt*, as we have proved in the Eighth and Twelfth Proposition. Therefore the water or *Ocean* in the *Torrid Zone* doth more press through the Orifices of the *Subterranean passages*, than in the Northern places; and therefore in these places the water less resisting, suffereth the water to flow from the Orifices of the Channels. Unto this I answer, That that *flux* of the *Ocean* is not only from the North, as the Objection seemeth to infer, and as some, especially the *Ancients* conceived of it, (who would have the water to flow in four Channels from the very Pole, as also some *Geographical Maps* do exhibit it) neither is it continual, but is observed by reason of the frequency of Northern *Winds*: moreover the great and perpetual abundance of *Snow* and *Rain* in those places augmenteth the water, and causeth it to flow towards the South. Add likewise, that in other parts another motion of the *Ocean* is found, concerning which see the following Chapter.

3. It seemeth not absurd, but rather most true, that all the *Fountains* of *Rivers* taken together, disburthening themselves into the *Ocean*, are the very *Fountains* of the *Ocean*: For seeing that in perpetual progress of time, so great an abundance of water floweth from them into the *Ocean*, questionless the water cometh from the *Ocean* to the very *Springs* and Channels of the *Rivers*, partly through the *Subterranean passages*, and partly by *Rains*.

4. It may seem to prove, that the *Fountains* of the *Ocean* may be in the very Channel, because that in the bottom of the *Ocean*, in some parts sweet or fresh water is found, which could not be but by some *Fountains* flowing in the bottom. *Linschaten* relateth, that in *Ormuz* fresh water is drawn by divers in the *Ocean*, at the depth of four or five *Orgys*: and the like *Fountains* are found in other parts of the *Ocean* and *Bays*. Unto this I answer, That few such *Springs* have yet been found, which suffice not the vast *Ocean*. Neither do we dispute concerning these *Fountains*, as we have said before.

Hence it is manifest, that in some sort it is true; and we may well say, that the *Ocean* hath *Springs*, but not in that sense that we are wont to speak concerning the *Springs* of *Rivers*, and in which we would have our Proposition to be taken. Hence also it is manifest what we ought to think concerning that Question, viz. Whether the *Sea* is always one and the same, and perpetually so remaineth, or whether it be another thing, whose parts are perpetually consumed and generated again?

Proposition

Proposition VIII.

The saltneſs of the Waters proceedeth from the particles of Salt, which are mixed with it; but whence they may exiſt or are ſo augmented, is the doubt.

Of the Saltneſs
of the Sea-
water.

Of Salt, and of
what made.

Experience proveth the first member of the Proposition, by which it is commonly known that *Salt* is made of *Sea-water*, by decoction of the *water*, or by the heat of the *Sun*, or the fervour of the *Fire*: In *Germany* and other places the *water* is separated by the help of the *Fire*: In *France*, the greater heat of the *Sun* performeth the same, the *Ocean* being let into certain Trenches made, in which in the space of some *Months* the *water* being exhaled by the force of the *Sun*, concreted and hard *Salt* is found. On the *ſhoars* of many Regions, as of *England* and other parts, plenty of *Bay-Salt* is found, the *Sea-water* continually overflowing those *ſhoars*, leaveth daily some particles or humors, from which the *water* exaleth, and concrete *Salt* is left, whose blackneſs is taken away by boyling; although it be washed away and dissolved from many Coasts by the violence of the *Ocean*, which is the cause that it is not found on all Coasts. Seeing therefore that this Experiment is common, *Aristotle* had small reason to alledge a false Experiment concerning a *waxen Vessel* let down into the *Sea*.

Hence it is manifest, that the proximate cause of the Saltneſs of the *Sea-water*, or the true subject of this saltneſs is the *Saline particles*, which are contained in that water. Therefore the *Aristotelians* with their *Maſter* spake improperly and obſcuredly without cause, when they defend and say, That the saltneſs of the *Sea* proceedeth from the aduſion of the *Sea*, caused by the *Sun*, or from the aduſt particles. But of this more anon.

The chief difficulty and controverſie is concerning the other member of the Proposition; Whence these *Salt particles* of the *Ocean* exiſt.

Aristotle ſuppoſeth, that dry exhalations or fumes (all which he ſaith are of an aduſt and Saline nature) elevated from the *Earth*, are mixed with humid vapours, and when that these have met together in *Rain*, they fall with these into the *Sea*, and that thence proceedeth the saltneſs and *Salt particles* in the *Sea*; and on this account he ſeemeth to defend this Opinion, because that from thence he may render a reason, why the *Sea* is always salt.

See *Aristotle*,
lib. 2. chap. 7.

But other *Peripateticks* will have it, and ſo do endeavour to draw *Aristotle* to their part, that this saltneſs is in the *Sea* it ſelf, by reason that it is perpetually ſcorched by the heat of the *Sun*: a ſign of which is, that the *water* is found by ſo much the leſs salt, by how much it is more deep or remote from the *ſuperficies*; for in the *ſuperficies* we diſcover it to be moſt salt.

Both these Opinions are obſtructed with great difficulties and abſurdities, ſo that it ſeemeth wonderful that the minds of *Philosophers* and Learned men could acquieſce in them. First, the opinion of *Aristotle* is thus obſtructed, that *Salt-rain* ſhould be found in the *Ocean*, which never yet was found to be void of all taſt of salt. Secondly, the *Sea* ſhould be leſs salt, when it raineth not for a long time; the contrary of which yet is found.

The other Opinion hath these difficulties; 1. It is falſe, that the waters of the *Ocean* are found the leſs salt, by how much they are nigh to the bottom; for there are few places, *viz.* in those bottoms where Springs of fresh water do flow. 2. Experience teſtifieth, that fresh water, although long expoſed to the *Sun* or heat of the *Fire*, yet doth not become salt. This Objection *Scaliger* endeavoureth to avoid by an over-nice ſubtlety; for he ſaith, that this hapneth in these Obſervations by reason of the exiguity of the *water*, which doth not grow thick, but reſolveth: For although you take a great quantity of *water*, and that you provoke with a light and gentle fire, that the reſolution may be impeded, yet the *water* acquireth no salt taſt. 3. *Lakes* and *Marſhes*, though heated by the *Sun*, yet wax not salt. This Objection alſo *Scaliger* endeavoureth to avoid, ſaying, that this hapneth by the ſucceſſion of fresh water. And

And the same is found in those standing *Pools* and *Lakes*, which only proceed from *Rain* or *Snow* dissolved, where there is no place for that refuge of ſucceſſion for those *Lakes* are rather dried, when that it raineth not for a long space, than turned into *Salt*, or rendered salt.

Therefore rejecting those false Opinions concerning the cause and original of *Salt* in the *Ocean*, let us lay hold of one of the moſt probable Opinions, with little or no difficulty in it, *viz.*

1. That these particles are Coeternal with the very *Ocean*; and therefore we ſhould no more diſpute concerning their original, than concerning the original of the *Ocean* it ſelf, the *Earth*, yea and of the original and generation of the World.

2. If that this Opinion be leſs complacent, we may make choice of another, *viz.* that these salt particles are here and there pulled from the *Earth*, and ſo dissolved into *water*. Now it is certain, that there are many *ſaline Mountains* or *Rocks* in the boſom of the *Sea*. The whole Iſle of *Ormus* is nothing elſe but a white and hard *Salt*, of which they make the Walls of their Houſes, and therefore no *Fountain* of fresh *water* is found in that Iſle. And none can be ignorant, how that many mines of *Salt* are found on the Land; and we have related concerning ſome in the *Eleventh Chapter*; but we need not particulars. Let us conſider the whole *Earth*, the greateſt part of which is nothing elſe but a *Salt*; for it hath its conſiſtency from *Salt*; for the *Chymical Philoſophers* do rightly prove, that the conſiſtency and compaction of every thing proceedeth from *Salt*; and Experience is answerable to the Aſſertion: for if that you take an hard piece of *Earth*, and burn it to *aſhes*, much *Salt* will be found in it.

Iſle of *Ormus* a
ſalt Rock.

The greateſt
part of the
Earth hath
much *Salt* in
it.

Nothing can be alledged againſt this Opinion that is of any value, and is not eaſily refuted: for ſome ſay, that it is impoſſible that those salt parts of the *Earth* ſhould perpetually ſuffice, and ſhould not at ſome time or other be conſumed by the *water* of the *Ocean*, which continually taketh away ſome part of them? Unto this I answer, That the *Salt* of the *Ocean* is not conſumed in ſo great abundance, that it ſhould ſtand in need of much inſtauration; and if that any be conſumed, yet notwithstanding that is laid up in another place, ſeeing that it is not removed out of the *Earth*.

Proposition IX.

Whether that Water be the freſher in the Ocean, by how much it is nigher the bottom? and why in ſome parts of the Ocean, fresh Water is found in the bottom?

Unto the first I Answer, That experience doth not teſtifie concerning that ſweetneſs, but in ſome places, of which the other Queſtion ſpeaketh; that in these places, in the bottom of the *Sea* are *Fountains* of fresh *water*, I have ſufficiently ſaid; for it cannot naturally be, that the more *Salt-water* ſhould exiſt above *water* leſs *Salt*, ſeeing that that is more heavy.

Of the freſh-
neſs of *Water*
in the *Sea*.

Those places of the *Sea*, where fresh *water* is found to ſpring at the bottom, may be collected by those that are ſtudioſus; from the Writers of *Geography*.

Proposition X.

The Water of the Ocean becometh leſs Salt by how much it is nearer the Poles; and on the contrary, the more salt, by how much it is more near the Equator or Torrid Zone.

Although this may be underſtood of moſt parts of the *Ocean*, yet the Proposition admitteth of ſome exceptions. The cause of this inequality in ſaltneſs is ſixfold.

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1. That

The Causes of the inequality of the saltiness of the Sea in different places.

The 2d Cause.

The 3d Cause.

The 4th Cause.

The 5th Cause.

1. That the heat of the *Sun* in the *Torrid Zone* lifteth up more vapours from the *Ocean* into the *Clouds*, than in the Northern places, which are the vapours of fresh-water; because that the particles of *Salt*, by reason of their gravity, are not so easily lifted up. Seeing therefore that from the *Water* of the *Ocean* of the *Torrid Zone*, or where the place is more near the *Torrid Zone*, so much the vapours are separated by the heat of the *Sun*; thence it cometh to pass, that the water that is left is found more salt there, than in the Northern places, where there is not so much fresh-water separated by reason of the weak heat of the *Sun*.

2. The second Cause is the heat or cold of the water; for the same numerical water, or salt meat, as also pickled meat, sauce, and the like, afford a more sensible saltiness to the taste when they are eaten hot, than when cold; for the heat or particles of the fire do move and render the particles of the salt contained in such meat, more acute, and separates them from the admixtures, whence they bite and prick the Tongue more sharply. Now because the water of the *Ocean* is the more hot by how much it is nigher the *Aequator*, or the parallels of the *Sun* at every day; and contrariwise the more cold, by how much it is more near the *Pole*; thence it followeth that waters, though they should contain the same quantity of salt, yet they must seem and appear so much the saltier to the taste, by how much they are nearer to the *Torrid Zone*; and by how much they are more near the *Pole*, by so much they have less sensible Salt.

3. The third Cause is the more or less quantity of Salt in the diverse parts of the Channel of the *Ocean*: for as we find in the parts of the *Earth*, that there are not pits of Salt in them all, neither where they are found is there the like quantity of Salt, must be held concerning the part of the *Earth* that the *Sea* washeth or covereth, that is, the Channel or the Shoars: where there is therefore most quantity of Salt or Mineral in the bottom or shoar of the *Ocean*, there the water is more salt, because that it is impregnated with a greater quantity of Salt. So the *Ile of Ormus* consisteth all of Salt; therefore the adjacent *Ocean* hath very Salt waters. But whether there be greater plenty of Salt in the Channel and shoars of the *Ocean* in the *Torrid Zone*, or more saline Mines than in the North, is very doubtful, by reason of the want of observation; yet it seemeth probable unto some, that there is greater quantity of Salt in those places, by reason of the greater heat of the *Sun*, by which the parts of the water are separated from the *Terrestrial* and Salt; but this is a deceitful sign.

4. The fourth Cause of the unequal saltiness is the frequency or scarcity of Rains, unto which we may add Snow: and in the Northern places Snow and Rain is frequent; in the places of the *Torrid Zone* they are less frequent in some parts of the year, and in other some they are almost continual. And therefore in these places, in the pluvial Months, the water of the *Ocean* is not so salt on the shoar, and hath less Salt in it than in the dry Months. Yea in many Regions of the Coast of *Malabar* the *Ocean* is fresh in the pluvial Months, by reason of the abundance of water that floweth from the top of the Mountain *Gats*, and falleth into the *Sea*: for this very reason, in divers Seasons of the year the same *Ocean* is of a various saltiness; yet because in the Northern places, the Rains and Snows are continual throughout the whole year, therefore this *Sea* is less salt than in the *Torrid Zone*.

5. The fifth Cause is the dissimilarity solution, or unequal faculty of the Water to dissolve this Salt and unite it to its self; for hot water sooner uniteth Salt unto it self than cold Water: although therefore in the Northern places of the *Ocean*, the shoars and Channels of the same contain more, or the like quantity of Salt, that those places of the *Torrid Zone* do; yet because the water is there more cold, it is not so able to dissolve and unite the Salt to it self so subtilly, as the water in the *Torrid Zone*, which is more hot.

6. The

The 6th Cause.

6. The sixth cause is the exoneration of many and great Rivers into the *Sea*; but this cause only taketh place in the parts of the *Ocean* that are vicine to the shoars; but is not discovered in the remote parts: So *Mariners* affirm, that the *Ocean* on the Coast of *Brasil*, where the *Silver-River* disburtheneth it self, loseth it saltiness, and affordeth fresh waters fifteen miles distant from the shoar. The same is observed of the *African Ocean* on the Coasts of *Congi*, where the River *Zaire* exonerateth it self, and of many more Rivers. Unto these add running Fountains in some parts of the bottom of the *Ocean*.

These are the Causes which seem to concur to the variety and diversity of saltiness in divers parts of the *Ocean*, from which the saltiness of every one of the *Seas* may be explained.

From whence also it is easy to give an account, why the water of the *German* and *Northern Ocean* is less apt to separate Salt from it self by coction, than the water of the *Spanish Ocean*, the *Canary Isles*; and that of *Cape Verd*, (whence the *Dutch* fetch Salt in great abundance, and transport it into the Northern Regions) viz. this *Ocean* is more near the *Torrid Zone*, and receiveth water from the *Ocean* of the *Torrid Zone*; the other is more remote from the *Frigid Zone*: yet I cannot deny the constitution of the Channels themselves to be more or less saline. The Sea-water at *Guinee*, in the *Ethiopian Ocean*, affordeth Salt at one coction as white as snow, such as neither the *Spanish Ocean*, nor any other in *Europe*, do produce at one coction or boiling.

Proposition XI.

Why Rain-water in the middle of the *Ocean* is found sweet; but the water which we separate from the Marine or Salt-water, either by decoction or distillation, is yet notwithstanding found salt, when yet the Rain-water proceedeth from the Vapours exhaled from the *Sea*.

The Learned *Chymists*, or true *Naturalists*, have hitherto laboured in vain, that they might find out an Art by which they might distill and abstract fresh water from the water of the *Ocean*, which would be of great advantage; but as yet their Labours have proved fruitless: for although, as well in the decoction as distillation, Salt may be left in the bottom of the Vessel, yet the water separated by decoction as well as distillation, is yet found salt, and not fit for men to drink, which seemeth wonderful unto those that are ignorant of the cause. Yet *Chymistry*, that is, true *Philosophy*, hath taught the reason; for by the benefit of this we know that there is a twofold salt in Bodies, or two kinds of salt, which although they agree in taste, yet they much differ in other qualities: one of these *Artists* term fixed, the other volatile salt. The fixed salt, by reason of its gravity, is not elevated in distillation, but remaineth in the bottom of the Vessel; but the volatile salt is full of spirit, and indeed is nothing else but a most subtle spirit that is elevated by a very light fire; and therefore in the distillation ascendeth with the fresh water, and is more firmly united by reason of the subtilty of the Atoms: neither is this volatile salt found only with fixed salt in Sea-water, but almost in all bodies, as *Chymistry* proveth by experience; but in some in a greater, and in other some in a lesser quantity: in a greater quantity in sharp tasted Herbs, in a lesser in oily Herbs. Therefore difficulty consisteth in the separation of this salt spirit or volatile salt from the water.

But why the pluvial water in the midst of the *Sea* is no less fresh than on the Land, seeing that yet it is generated by abstraction of the exhalations of the *Ocean* caused by the fervour of the *Sun*, or from some subterraneous fire, which evaporation doth little differ from distillation.

The cause seemeth to be Fourfold; 1. A slow operation, by which the tenuous part is only elevated from the *Ocean*, which although it containeth a saline volatile spirit, yet it hath it in less quantity, than if that this

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exhala-

Fresh-water abstracted from Salt-waters

exhalation were caused by a more forcible heat. 2. The long way that this vapour passeth through, before that it arriveth unto that Region of the Air, where it is condensed into rain, in passage it is possible that the saline spirit is by degrees separated from the watery particles. 3. The admixture of other watery particles existing in the air. 4. A Refrigeration, Coition, and condensation of the vapour: for these exhalations exhaled from the Ocean by degrees are more and more refrigerated, and being conjoynd with other obvious and admixed vapours, they condense into a more thick vapour or cloud: in this Refrigeration and condensation or coition of the saline spirit with the fiery particles they fly into the more exalted part of the Air.

Now why the same is not performed in distillation (where the vapours exalted are also condensed) the cause is, 1. That by reason of the small passage, the saline spirit is as yet over straitly conjoynd to the watery particles. 2. That the vapour restrained in the vessel, admitteth not a free passage to the evolant spirit.

Proposition XII.

Sea-water is more ponderous than fresh water, and the water of one Sea is more heavy than another.

Sea water more heavy than fresh water.

The cause is manifest from what hath been said, by reason that the Sea water containeth a fixed salt, which is a far more weighty body than fresh water. And we have shewed that in divers parts of the Sea, there is a divers quantity of salt. Yet doth it not follow, that water is more heavy by how much it is the more salt, which doth not augment the gravity, but lesseneth it, and yet rendreth the water very salt.

Proposition XIII.

Salt water doth not so easily freeze as fresh, or a greater degree of cold is required to the congelation of Sea water than of fresh.

Salt water doth not so soon freeze as fresh.

Experience sufficiently sheweth this against the Aristotelians, who defend that water is so much the lesser obnoxious to congelation, by how much it is the more pure, and therefore should more easily congeal, as receding more from the elementary water, which is false. Now the cause is, that in the salt itself there is a certain spirit, which resisteth congelation, and being separated from the salt, admitteth of no congelation from the hardest frost, as those that are skilful in Chymistry know. For the spirit of salt is a medicament sufficiently known, and of frequent use.

Proposition XIV.

Why the Ocean is not bigger, seeing that it receiveth so many Rivers.

The cause is, 1. That the water returneth to the Sea, through subterraneous passages unto the fountains of the Rivers, as shall be explicated in the following Chapter. 2. Because that many vapours are elevated from the Ocean, whereof many being resolved into rain fall into the Ocean, and part on the land.

Proposition XV.

Certain parts of the Ocean differ in colour.

The water in all places not of one and the same colour.

Experience testifieth, that in the Northern places the Sea seemeth of a more black colour; in the Torrid Zone, of a dusky colour; in other places of a blew. About certain shoars of new Guinee the Ocean is found of a white colour.

lour, in some other place of a yellow. In Straights the water appeareth to incline to white, at the Shoars of Congo not far from Bay a D'Alvaro Gonzales a Rivulet or an Arm is disburthened into the Sea of somewhat a Reddish colour, taken from a mine of red earth, through which it floweth. But the Arabian Gulph called therefore the Red Sea, by reason of the property of the colour, some will have the denomination taken from King Erythraeus, others from the splendour which the Raies of the Sun reperculed doth effect. But the more probable opinion, and that which is confirmed from experience, is, that the redness doth arise from the sand of a red colour, which is found in the bottom of this Sea, and on the Shoars, and is frequently admixed with the water. The cause of this admixture which seemeth contrary to the ponderousness of sand is the vehemency of the flux and reflux of the water; or its swiftness and agitation in this Sea; by which it cometh to pass that the sand or gravel is agitated and moved up and down, and so hindered by the continual motion of the Sea, that it cannot rest. Mariners affirm that the water of this Sea sometimes appeareth as red as blood, but if taken up in a vessel, the sand will sink down, and then the water appeareth otherwise. It often happens that storms from the Red Sea rushing into Arabia, or Africa, carry with them so great an abundance of sand, and cast it on the earth, that it covereth whole troops of men and beasts, whence proceedeth the true Mummie.

The water in the Red Sea only ed by reason of the red sand in it.

Whether from the same or another cause the Sea between California and America be termed red (Vermejo) I have not as yet found it observed by Writers.

Proposition XVI.

Certain peculiar things are found in certain parts of the Ocean.

The Sea termed Di Sargasso by the Portugals, which beginneth not far from Cape Verd in Africa, about the Isles of Salt, and extendeth it self from the 20th. degree of Northern Latitude, unto the 34th. of South Latitude. The colour of this Sea seemeth to be green, which is not the colour of the Sea itself, but of a certain small leaved herb in the bottom of it, called by the Portugals, Sargasso. The leaves of this weed mutually complicated one into another, swim on the face of this Ocean in so continued a tract, that the water can hardly be seen, so that the Seamen afar off discovering this Ocean, take it for an Island, and green Land, neither can they pass through this knot of weeds except that they be helped by a moderate wind at least: the herb beareth a small berry, whence it ariseth is not yet known. Seeing that this Sea is not so near any land, that it should have its original from them, neither is it probable that it should come from the bottom of the Sea, by reason that the profundity of this Sea is such, that in many places it exceedeth the length of any line or cord. In the Ocean not far from the Promontory of Good Hope, are many floating red-like shrubs of a great thickness discovered, unto which the herb Sargasso is implicated. Seamen take it for a certain, that if they see them thereabouts, that they are near to the Promontory of Good Hope, or else have just past it.

Of things in the Ocean peculiar to certain places.

On the Shear of the Isle of Madagascar the Ocean casteth up red and white Coral, which augment like shrubs under the water, and although that they be soft in some places, yet between Madagascar and Africa there are reported to be Rocks of hard Coral.

Partial found on the Shoar of Madagascar.

In the Ballick Ocean, nigh to the Shoar of Boressia, the Shoar casteth forth most excellent succinum, which the Inhabitants are taught, when certain winds do blow, to draw up with certain Iron hooks.

The Ocean casteth up Amber only in the Torrid Zone, viz. at the Shoar of Brazile (where a peece of 500 l. weight was taken up by a Dutch Soldier, and presented unto Count Nassau) at the Isle of Madagascar, at Cape Verd, at the Isle of Maurice; at the Isle of Sumatra, and other Indian Isles. Garci-

Amber only in the Ocean in the Torrid Zone.

as relateth that a piece of 200 l. weight was found; yea that some *Ilands* consist wholly of *Amber*, but he doth not name them.

In the *Aethiopic Ocean* at *Guinea*, *Congo*, and *Angola*, this is peculiarly observed, that at the sides of the *Keel* of the *Ship*, whilst that they remain there, *green Cockles* like unto *grass* do stick, which hindreth the sailing of the *Ships*, and eateth the *wood*.

On the Coast of *Languedock* in *France*, *Birds* unshaped first of all, then by degrees they receive form, and fixing of their *bill* in the *wood*; when they begin to move, by degrees they are pulled off, and swim on the water like *Geese*.

The excrement of the *Ocean*, termed the *Scum* of the *Sea*, is found floating in many places; but in some in greater quantity than in others.

On the Coast of *Malabar*, and at *Cambaja*, *Serpents* are discovered on the *superficies* of the *water*: this is a sign to *Sea-men*, that they are near to those *Regions*.

About four miles from *New Spain* many *Roots*, *Bulrushes* and *Leaves* like unto *Fig-leaves* float on the *water*, which they eat, and are in tast like unto *Coleworts*.

In the description of the first Navigation of the *Dutch* unto the *Streights* of *Magellan*, we read that on the 12th of *January* in *Anno* 1599. the water of the *Ocean* not far from the *Silver-River*, or *Rio de la plata*, in *Brasil*, appeared of a *red* and bloody colour; but being drawn up in a *bucket*, or the like, when that they had more thoroughly viewed it, they found that an innumerable multitude of *Worms* of a *red* colour were contained in that *water*, and being taken up in the hand they leaped like unto *Fleas*: And these *Sea-men* call *Sea-fleas*; and they are supposed to come from an innumerable company of small *Crabs*, which being found on the *South Continent*, fill the *Sea*.

Here is no place to treat of the *Animals*, of which there are various kinds in divers places of the *Sea*.

Proposition XVII

Why the Sea in the Night season seemeth to glitter, especially if that the Waves be raised the more vehemently by the Winds.

This question requireth the knowledge of that difficulty concerning the causes of Colours. Divers are the resolutions of *Philosophers* concerning them; but as for the explication of the proposed *phenomenon* or *Question*, that Opinion seemeth the most commodious, which sheweth how Colours do exist, or rather appear from a certain and various motion; but we leave the accurate explication of the same to *Naturalists*.

Proposition XVIII.

The Ocean, or rather all Water casteth out Terrestrial Bodies on the shoar, especially in the Full Moon.

It is not difficult to render an account of this property, which Experience sufficiently testifieth: For *Water* is never without some motion, which if it be swift, and towards one quarter, it carrieth *Terrestrial bodies* with it, until it meeteth with the *shoar*; where, by reason of the ceasing vigour of the motion of the *water*, those *Terrestrial bodies* are laid down; but in the *Ocean* the *Waves* are carried hither and thither: By these the *Terrestrial bodies* are carried after the same mode; and because that all *Waves* tend to some coast of *Land*, therefore all *Terrestrial bodies* are carried towards the *shoar*.

In

In the *Full Moons* is the greatest motion of the *Ocean*: therefore vain is their Opinion, who believed the *Ocean* to be an *Animal*, and to have sense, by which it purgeth it self from all dregs, *Terrestrial bodies*; but here the cause is sufficiently manifest.

CHAP. XIV.

Of the Motions of the Sea in general, and in particular of the Flux and Reflex.

Proposition I.

Water hath no natural Motion, except one, by which it moveth from a more higher place unto those that are more low; but if the vicine place or body be equal, or of a greater Altitude than the superficies of the Water, then the Water naturally resteth, that is, it is not moved, except that it be compelled by a violent cause.

The truth of this Proposition is manifest from *Vulgar experience*; for if that a vessel containing *water* be moved, the *water* so long fluctuateth in it until no part be higher than the other, that is, until they compose a *Spherical figure* or *superficies*, as we have said in the *Thirteenth Chapter*. For although this Motion hath a violent cause, *viz.* the motion of the *Air* about the *Earth*; yet because that there is a great question concerning this cause, and it is so manifest in the *water*, that it seemeth not to come unto it from an external cause, so for to distinguish this motion of the *water* from other motions, we term it *Natural*. Now this motion is unto that quarter, unto which the place more depressed is situated.

Water hath no natural motion, except one.

Proposition II.

When part of the Ocean is moved, the whole Ocean is moved, or all the other parts of it are also moved; but by so much the more that every one is nearer the part moved.

For because that if part of the *Ocean* be moved, it doth necessarily change place, and therefore this place is more low than the place of the *vicine water*, this nearer *water* shall be moved into this place, and the *vicine water* of that into the place of that, and so forward in the other parts: But there is lesser motion in the places of the more remote parts.

Proposition III.

To observe the quarter into which the Sea that is moved, tendeth.

Chuse a time, if you can, when no violent *Wind* bloweth, and cast into the *Water* a body almost of the same gravity with the *water*; let the place be observed where it was cast in, to wit, let the *Boat* remain there immovable: then when that this body is carried by the *Sea* a moderate space from the place where it was cast in; then let another *Boat* be placed at the place of that, and let the quarter be observed into which the situation of this second *Boat* vergeeth from the former: For this also shall be the quarter, in which we say that the *Sea* at that time is moved.

The quarter into which the Sea that is moved, tendeth.

Proposition

Serpents on the Coast of Malabar.

The Sea in the Night seemeth to glitter or shine.

Terrestrial bodies are cast out of the Ocean on the Shore.

Proposition IV.

The Motion of the Sea is either direct, or a Vortex, or a Concussion.

I call that direct which tendeth unto some quarter; a *Vortex*, when the water moveth into a round, and is in some part rejected: a *concussion*, when it trembleth. But laying aside the two latter unto the end of the Chapter, we shall treat of the direct motion, and therefore we shall call this by a general term, the *Motion of the Sea*.

Proposition V.

Of the Motions which we find in the Sea, some are general, some proper and singular, other some contingent.

I call that *General* which is found almost in all the parts of the Ocean, and that at all times. I call those proper and special motions by which only some parts of the Ocean are moved, and they are twofold, *perpetual* and *anniversary*: the former are those which persist without mutation or cessation; the other, which are found at certain months or days of the year in some certain Sea.

I call those motions of the Sea *contingent*, which without any certain order sometimes do cease, and other some begin; such are infinite.

Proposition VI.

Wind is the cause of the contingent motion of the Sea, forcing the Sea to a quarter opposit to the Wind; neither is the Sea ever free from such motions.

For seeing that the Air toucheth the Sea, and the Wind is nothing else but a strong commotion of the Air, and a pressure towards the Earth; therefore the Air being forced to the Sea, endeavoureth to drive it from its place, and by reason of the Sea is fluid, and not able to resist the forcing Air; therefore it is moved from its place towards the place of the opposite quarter, and forceth another water, and this another, and so on.

Now seeing that there is always some wind in the Air, sometimes in this place, and sometimes in that, and sometimes diverse in divers places at one and the same time, thence it followeth, that there are certain contingent motions always in the Sea, which are more discernable in the parts nearer the Wind, and therefore the rather, by reason that the Sea doth most easily receive an impression, because it is fluid.

Proposition VII.

The general motion of the Sea is twofold; one continually from the East to the West, the other composed of two contrary Motions, which is termed the Flux and Reflux of the Sea, in which the Sea at certain hours floweth to the shoar, and in certain others floweth back again. We shall first treat of the first.

That the Sea moveth from the East to the West continually, is chiefly proved from the motion of that Sea, which lieth in the *Torrid Zone* between the Tropicks: For because the motion is more strong, hence it is less hindered by other motions.

This Motion of the Sea is manifestly found by those that sail from India to Madagascar and Africa, also in the Pacifick Ocean, between New Spain, China, and the Moluccoes; also in the Ocean, between Africa and Brasil.

So

So through the *Streights of Magellan* the Sea is carried from the East to the West with a vehement motion. So through the *Streights of Maillan*, through Channels, between the *Isles Maldives*, the motion of the Sea carrieth Ships from the East. The Sea glideth impetuously between Cuba and Yucatan into the Gulf of Mexico; and floweth out into Cuba and Florida. At the Gulf of Paria there is a violent influx, so that that Gulf is termed *Os Draconis*, the Dragons Mouth. Famous also is the flux at the Land of Canada. From the Tartarian Ocean the Sea moveth through the *Streights of Nova Zembla*, and *Waigats Streights*, which is proved both from the very motion it self, and also from the abundance of Ice, which the Tartarian Ocean casteth up at the *Streights of Zembla*. And at the Northern shoar of America in the Pacifick Ocean, the motion is towards the *Streight Anian*; also from Japan the Sea is moved towards China. So in the *Streight Manilla*, the motion is from East to West; so also in the *Streight Java*. And when the Atlantic Ocean is moved towards the Coast of America, the contrary is found in the Pacific Ocean. For this is moved from the shoars, which is the most conspicuous at Cabo dez Corrientes, between Panama and Lima.

Proposition VIII.

The winds oftentimes change the general motion of the Sea, especially those fixed winds, which we shall shew to be termed Motions, in the XXI. Chap.

For because that most of these do blow from the South and North, or from the Collateral quarters of these, thence it cometh to pass that the Sea by reason of its general motion tendeth towards the West, it moveth towards the Collateral quarters of the West, viz. North-west, or South-west: yea the general wind, when that it seldom bloweth from the East, but most commonly from the Collateral quarters of the East, changeth this general motion of the Sea. Much more do the North winds in the Northern Sea, where the general motion is little discernable in the parts of the Ocean.

Proposition IX.

The cause of this general motion of the Sea from the East to the West is uncertain.

The Aristotelians suppose (although it were unknown unto Aristotle and his followers; and indeed to all the European Philosophers, before the Navigation of the Portugals through the Ocean of the Torrid Zone) that it is caused by the prime motion of the Heaven, which is not only common to all the Stars, but also to the Air in part, and to the Ocean, by which all are carried from the East to the West. But some that follow Copernicus, as Kepler, although they also acknowledge the Moon also the cause of this motion, yet they determine that the motion of the Earth doth not a little contribute unto this motion, viz. they suppose that the water, seeing that it is not continuous, but only contiguous unto the Earth, cannot follow the circumrotation of the Earth, and resist it towards the West, whilst the Earth withdraweth it self towards the East, and therefore that the Sea moveth not from one part of the Earth unto another, but that the Earth leaveth part of the waters one after another.

Othersome, who are not pleased neither with the solution of Aristotle nor Copernicus, having recourse unto the Moon, will have her to be Empress of the waters; and that she leadeth about with her, and draweth the Ocean from the East to the West. If it is demanded how? they reply, there is an occult faculty influence, sympathy, vicinity to the Earth and such like: indeed it is very probable that the Moon is the causer of this motion, by reason that in the new and full Moons this motion is more violent than in the quarters, where the motion for the most part is very little.

N

The

General, proper and singular motions of the Sea.

Wind is the cause of the motion of the Sea.

The motion of the Sea twofold.

The motion of the Sea oftentimes changed by the winds.

The Opinion of Aristotle and Copernicus concerning the general motion of the Sea from East to West.

The most acute *Cartesius* hath explained a *Mathematical mode* by which the *Moon* causeth both this *motion* of the *water* and *Air*; for he supposeth according to his general *Hypothesis*, that an infinite number of *Atoms* do move round about the *Earth*, by which the space even unto the *Moon* is filled without any *Vacuum*, which space he calleth the *vortex* of the *Earth*, viz. Let the *Earth* be *F E G H*. The *water* 2143, the *Air* 6587, the *vortex* of the *Earth* *B A D C*, the *Moon* *B*. Therefore saith he, if that there were no *Moon* in the *vortex* *B A D C*, the *particles* of its *vortex* would be turned round about the *center* *T*: but because that the *Moon* is in it, therefore the space through which the *Celestial matter* floweth between *B* and *T*, is rendred more Angust, and thence it followeth that the *Celestial matter* floweth there more quick (between *B* and *T*) and therefore more presseth the *superficies* of the *Air* in 6, and also the *superficies* of the *water* in 2. than if the *Moon* were not in the *Diameter* of the *vortex* *B D*: and seeing that both the *bodies* of the *Air* and *water* are *fluid* and easily plyant to this pressiion, it must not be so high above the part of the *Earth* *F*, as if the *Moon* were without the *Diameter* *B D*. and on the contrary must be more high towards *E*. But whilst that the *Earth* is carried from *E* through *F* towards *G*, or from the *West* to the *East*, the tumour of the *water* 412, and also of the *Air* 856, which now incumbs over the part of the *Earth* *E*, by degrees do move unto other parts more Occidental, so that after six hours they incumb over the part of the *Earth* *H*; and after twelve hours over the part of the *Earth* *G*. Whence it cometh to pass that the *water* and the *Air* are carried from the *Oriental* parts of the *Earth*, unto the *Occidental* parts of the same by a continual flux; thus *Cartesius*. The streis of the *Demonstration* is in this, because the *Earth* *E F G H* with the *water* 1234 is moved round, and also the *Celestial matter* of the *vortex* between *B A D C* and 6587. The *Moon* being in *B*, maketh the space *B 6* with a certain pressure passing through the *Air* and *water*, whilst that it passeth through *B*, is exprest towards *J H G*, and whilst that it passeth through *B*, is exprest towards *H G F*, and so forwards. Neither doth the part of the *Celestial matter* at the *Moon* having allapsed in *B D* mount upwards, because it is repelled, and that all are full of bodies. And although it preis the *Air* and *water* 62 *F*, not only towards the *West*, *E 15*, but also towards the *East*, 73 *G*. yet because the parts scituated from 62 *F*, towards 73 *G*, do more and more recede from these *Streights*, but the parts towards *E 15*, do more and more draw near, therefore by these chiefly is that force received.

But in this explication of this ingenious person, these things are required or wanted.

1. From that it should follow that the *Sea* should cease to swell when that the *Moon* approacheth unto it, and that it should swell in the parts, which are a quadrant, or six hours absent from the *Moon*: viz. The tumour is in *E 15*, but in *F 26* where the *Moon* is vertical, the *Altitude* is least. But this is repugnant to experience, for in *F 26* the *Sea* swelleth, but in *E 15* the tumour is very little. How this absurdity may be avoided, we shall shew in the following Proposition.

2. It is not sufficiently shewed (*Cartesius* hath omitted this) why, whilst the *Celestial matter* in the narrow space *B 6*, presseth the *Air* *C*, and the *water* 2; it is not equally moved towards *G 37* from both the *water* and the *Air*, and the *Celestial matter* is carried with the *Earth* towards *G 37*, and therefore the *water* and the *Air* is rather carried towards the *East* than the *West*. And it is a doubt whether it can be avoided by the only subduction of the parts from 6 *D B*, towards *G 37*.

3. The *Moon* drawing near to any *Sea*, a more vehement wind is found in that part towards the *West*, from the *East*, than another time; but this hapneth not.

4. It is more manifest that the *Sun* maketh that motion of the *Air* from *East* to *West*, or that a general wind doth it; for we find that in the morning before the rising of the *Sun*, and also with the rising of the *Sun*, in many places; for then it is distant a quadrant from the vertex of the place. These things deserve consideration in the *Cartesian* Explication, to say nothing of the *Hypothesis* it self.

But

But whether this motion can be referred to a general East-wind, is doubted: For seeing that that Wind is always under the *Torrid Zone*, it would seem to cause that motion of the *Sea* to be perpetual. For it is evident, that with the augmentation of the Wind, the motion of the *Sea* is augmented; but that it is a sufficient sign, that the motion it self doth depend on the Wind. For the connexion hindreth, which this motion hath with the *Moon*, viz. that the *Moon* approaching to the *Sea*, it causeth that 2 to swell, because in the Full and New Moon that motion of the *Sea* is more vehement from the East to the West, which the *Demonstration* of *Cartesius* excellently explaineth, viz. because the *Moon* in the New and Full is more near unto the *Earth*, and so the port *B 6* is rendred more angust for the transition of the *Celestial matter*, and therefore the pressure is the greater. And although when the *Moon* is at Full, that intumescency may be referred unto the greater light of the *Moon*, yet the *Moon* being in the New, this cause ceaseth; and therefore it is evident, that the *Moon* is not the cause of this motion, but rather that pressure of *Cartesius*, as we shall observe in the following Propositions.

Proposition X.

The second general Motion of the Sea is the flux and reflux of the Sea, in which the Sea in the space of twelve hours and about half an hour, floweth unto most Coasts, and floweth back again: It floweth when that the Moon approacheth unto the suprem or lowest Meridian; and refloweth, when the Moon recedeth from the Meridian towards the West, and towards the East.

Where we must first discover, whether the Ocean by this motion be moved unto one certain quarter, viz. from the East to the West, or from West to East?

For the shoars of Gulphs and Channels of Rivers, in which this flux and reflux is more manifestly found, than in the vast Ocean, are extended nigh unto, or according unto divers quarters, some towards the East from the West, as the *Mediterranean*; some from the South towards the North, as the *Arabian Gulph*. And in every one of these Gulphs and Shoars, the water floweth towards the quarter of extension. Therefore in divers Gulphs and Shoars, this motion of the Sea or Ocean tendeth into divers quarters: therefore our first Inquiry must be, Whether this motion of the Ocean observeth any certain quarter; and whether it be moved elsewhere unto other quarters; or whether it observe two quarters, viz. the Occidental quarter in the flux, and the Oriental in the reflux? Or whether one and the same quarter, both in the ebbing and flowing? viz. the Occidental. Unto this may be answered, That the last is true, viz. that the whole Ocean in the flux is moved from the East to the West; but in the reflux it is moved indeed by a general motion again from the East to the West: but yet in the flux more quantity of water floweth unto a certain part; but in the reflux, (or to speak more properly, the deflux) it is not moved into a contrary quarter, but unto the same Occidental quarter; but yet a lesser quantity of water doth flow in.

So then we must determine, that the flux and reflux of the Sea is not a distinct motion from the general motion of the same, which we have explained in the former Proposition, by which the Ocean continually moveth from East to West, but that it is a certain mode or affection of this general motion; and therefore if that this motion be considered in the whole, or in the middle of the free Ocean, it is not so properly termed a flux or reflux of the Sea, but rather a flux or deflux, yea those terms are not apt enough; but it is better to call it an Intumescency and Detumescency, so that by these peculiar appellations, the quality of the flux or motion may be distinguished from the motion or flux it self. For the Sea always floweth from the East to the West, and only appeareth to re-flow, by reason that when in one place there is a greater quantity of water, and that it floweth with vehemency to a certain place, afterwards in another time this impetus ceaseth.

N 2

But

The flux and reflux of the Sea is the second general motion.

But it is therefore termed a *reflux*, because that the Sea seemeth in *Bays* and *Shores* to draw near and depart. According to the extension of *bays* and *shores*, which hapneth not by reason of the quality of the Motion it self; but by reason of the situation of *Coasts* and *Channels*, viz. that the *Water* doth return back to a contrary quarter, but that the *Sea* falleth down; this proceedeth not from the situation of the *Coasts*, but from the condition of the place it self.

Neither ought or can the motion of the *Sea* be regarded from the appulse to the *shore*; for whatsoever the motion of the *Sea* be, or unto what quarter soever it be made, the *flux* is always towards the *shore*, which is by reason of the fluid nature of the *water*.

Now seeing that both the *flux* or *reflux*, or in the *intumescency* and *detumescency*, the *Sea* is moved towards the same quarter, viz. from the *East* to the *West*, and doth not re-flow again, is collected from hence. First, that in the *Ocean* removed from the *shores*, under the *Torrid Zone*, no other motion is found than that by which it is carried from the *East* to the *West*. Secondly, In the *Streights* which directly extend from *East* to *West*, and in which the parts of the *Ocean* are joyned; as the *Streights* of *Magellan*, *Manillan*, *Java*, and others amongst the *Indian Isles*: In these *Streights*, I say, the *Sea* indeed swelleth and falleth in *twelve hours*; but yet the *Sea* in the *detumescency* doth flow back from out the *Streights* from the *West* to the *East*; therefore another orifice of the *Streight* into the *West*, which is a manifest sign that this *intumescency* and *detumescency* is not a peculiar motion, but a modification of the general motion, neither doth the *Sea* flow back into the *East*. Therefore *Scaliger* and all others are deceived, which here introduce a double motion replicated into it self.

But yet this must be understood, that when we say, that this motion is made from the *East* to the *West*, the *Cardinal quarters* are not only understood, but also those quarters that are collateral, viz. the *Sea* is moved also by this *flux*, from the *Collateral quarters* of the *East* unto the *Collateral quarters* of the *West*, yea unto the *North* and *South*; but not by so forcible and valid motion.

Proposition XI.

To declare the cause of the *intumescency* and *detumescency* of the *Sea*; or the *flux* and *reflux*, vulgarly so termed.

There is almost no phenomenon of Nature, that hath more exercised the wits of Learned men and Philosophers, and that hath deluded more endeavours. Some have made the *Sea* and *Earth* to be an *Animal*, which by its inspiration and expiration, hath caused the *flux* and *reflux*. Others make the cause to be a great *Vortex* near to *Norway*, which for six hours sucketh up the *water*, and for so many spueeth them out again. *Scaliger* and Others supposed the *Coasts*, especially those of *America*, to be the cause thereof, by reason that they repel the appulse of the *Sea*, which proceedeth from the general motion: But many, when that they discover the connexion of this *intumescency* and *detumescency* with the motion of the *Moon*, determined, that it only depended on that. But how this should be, is a more than ordinary task to discover; seeing that they reply nothing else, but that the *Moon* doth attract upwards humors by an occult quality and sympathy. But these are only words, which signifie nothing else, but that the effect is caused by the *Moon* after some mode that we are ignorant of: but this is the mode demanded.

Cartesius deduceth it from his general Hypothesis after this manner; Let the *Diagram* of the *Ninth Proposition* be taken, in which let *A B C D* be that *Vortex* which hath the *Earth* for its Center, which with it and with the *Moon* is carried in a greater *Vortex* about the *Sun*. *M* the Center of the *Vortex*, *E F G H* the *Earth*, 1 2 3 4 the superficies of the *Sea*; from which, for the greater perspicuity, we do suppose the *Earth* to be encompassed on every side; and 5 6 7 8 the superficies of the *Air* encompassing of the *Sea*. Now if that there

there were no *Moon* in this *Vortex*, the point *T*, which is the Center of the *Earth*, ought to be in the point *M*, which is the Center of the *Vortex*; but the *Moon* being towards *B*, this Center of the *Earth* *T* ought to be between *M* and *D*, by reason that the *Celestial matter* of this *Vortex*, is somewhat more quicker moved than the *Moon* or the *Earth*, which it carrieth with it. Except that the point *T* were a little more distant from *B* than from *D*, the presence of the *Moon* would hinder, that that should not so freely flow between *B* and *T*: so seeing that the place of the *Earth* in this *Vortex* is not determinated, except from the equality of the strength of the *Celestial matter* flowing about it; therefore it is evident that it ought somewhat to approach towards *D*. And after the same mode, when the *Moon* shall be in *C*, the Center of the *Earth* ought to be between *M* and *A*, and so always the *Earth* departeth a little from the *Moon*. Moreover, because by this means, from this that the *Moon* is towards *B*, not only the space through which the *Celestial matter* floweth between *B* and *T*, but also that space through which it floweth between *T* and *D* is rendred more angust; thence it followeth that this *Celestial matter* there floweth more swiftly, and therefore doth more press both the superficies of the *Air* in 6 and 8, and also the superficies of the *Water* in 2 and 4, than if that the *Moon* were not in the Diameter of the *Vortex* *B D*: Now seeing that both the bodies of the *Air* and *Water* are fluid, and easily obnoxious to this pression, they ought not to be so high above the parts of the *Earth* *F* and *H*, as if the *Moon* were without this Diameter *B D*; and so also on the contrary they ought to be higher towards *G* and *E*, so that the superficies of the *Water* 1 and 3, and of the *Air* 5 and 7, do there protuberate. Now because that part of the *Earth* which is now in *F*, on the opposite quarter of the point *B*, where the *Sea* is very little high, after six hours it will be in *G*, on the opposite Region of the point *C*, where it is most high, and after other six hours in *H*, on the Region of the point *D*, and so consequently, or rather because that the *Moon* in the mean space doth somewhat proceed forwards from *B* towards *C*, as running in a Months space through the Circle *A B C D*, part of the *Earth* that is now in *F*, on the opposite Region of the body of the *Moon* after six hours and twelve minutes, either more or less, shall be beyond the point *G* in that Diameter of the *Vortex* *A B C D*, which intersecteth that Diameter of the same *Vortex* in which the *Moon* shall then be at right Angles, and then shall the *water* be there most high: and after six hours with twelve minutes it shall be beyond the point *H*, in the place where the *water* shall be very low, &c. whence it is clearly discovered, that the *water* of the *Sea* in every twelve hours and twenty four minutes, shall flow and re-flow in one and the same place.

This is the Demonstration of *Cartesius*, in which that is especially ingenious, that it aptly sheweth not only how the *flux* or *intumescency* is made at the place, when that the *Moon* is moved at its Vertex or Meridian; but also when that the *Moon* beneath the Horizon is moved to the Meridian of Mid-night.

We have said in the end of the *Ninth Proposition*, what any one may seem to require in this Demonstration, especially that which seemeth to be admired at, that *Cartesius* should not so much as think that according unto this Demonstration, That the least Altitude of *water* and all kind of *Detumescency*, ought to be when that the *Moon* cometh to the Meridian; as the *Moon* being in *B*, the least Altitude of *water* is in 2 and 4, and on the contrary the *water* increaseth with the departure of the *Moon* or *Earth*, so that when *F* shall be in *G*, that is, six hours from the *Moon*, it shall have the greatest Altitude; which in truth is contrary to all Experience; for with the access of the *Moon* to the Meridian, the *water* increaseth; and with the departure of the same, decreaseth. But the words of *Cartesius*, as well as the *Diagram*, assert the contrary. But I suppose this absurdity may be removed from the Demonstration, and that by this mode (so that it may be approved of by *Cartesius*;) for let us place the *Vortex* of the *Earth* *A B C D* to be without the *Moon*, and the *water* 1 2 3 4 to be equally distant from the Center *T* without any Tumor, but

The cause of the flux and reflux of the Sea.

See Scheme.

but yet to be moved round with the *Earth* and *Celestial matter*, between A B C D and 5 6 7 8. Now let the body of the *Moon* draw near unto this *Vortex*; for Example, into B, and therefore the space T B becometh more narrow; and the *Celestial matter*, whilst that it endeavoureth to pass through it, presseth the *Water* in 2 towards E.

Therefore whilst that the *Water* is expelled from 2 towards E, it is demanded where the greatest tumor of *Water* will be, whether in the place E, which is a quarter distant from the place F, (unto which the *Moon* is vertical;) or whether in a place nigh unto F towards E? If that you assert the first, viz. that the tumor ought to be in E, Experience doth then gain say; but that the second is truly so, Experience confirmeth, and Reason doth induce to believe, viz. whilst that the *Moon* consisteth above the place E, the *Water* is expelled from 2 towards I: but the greatest tumor will be in the place near to 2, not in I. For this is manifest by Experience, because the *Occidental places* do later discover the *intumescency*; but reason and the motion of the *Water* do altogether require the same Laws: for if the *Water* be poured forth into 2, that it may flow towards E, the greatest quantity will be in the place E, a little less in the place near to that, and yet far less in the place nigh to that, and least of all in E. So also, when that *water* is driven from 2 towards E, its greatest quantity and accumulation shall be in the place near to 2; and so much the lesser, by how much the place is more remote from 2; but because the *Earth* is moved round that E may come unto F, then at length shall the greatest tumor be in E, and the *water* shall be forced towards H.

Therefore the *Diagram* of *Cartesius*, with the Demonstration it self, ought to be changed, that the tumor may be in the place near unto the very 2, that is, to that unto which the *Moon* is vertical. What else may be here said, we shall handle in our treatise of the consideration of the *Cartesian Philosophy*.

Proposition XII.

In Full and New Moons the general motion of the Sea from the East to the West is more violent; also the intumescency of the Sea is found great in most parts; but in the quarters the motion is found the least of all, and so also in the intumescency.

Experience sufficiently proveth this *Proposition*: for *Mariners* testify, that the *Sea* doth foam and swell in *New* and *Full Moons*, and in the *quarters* is calm. Now it is easily demonstrated according to the *Hypothesis* of the preceding *Propositions*: for the *Moon*, when it is either *Full* or *New*, is more near the *Earth* than at any other time; and in the *quarters* more remote, as *Astronomers* do demonstrate. Now when the *Moon* is more near the *Earth*, that is, when that the space B T is less; the *Celestial matter* being hindered, more vehemently presseth the *water* from 2 to 1 (because it is more near) but on the contrary in the *quarters*.

Yet the motion is observed to be more violent in the *Full Moons* than in the *New*, at least in some places, which except you will ascribe to the light of the *Moon*, I see no other cause, neither can we otherwise shew, why in the *Full Moon* both *Trees* and *Animals* have greater humors, than in the *New*, seeing that the *Sea* is equally augmented in the *New Moon*. Yet that is marvellous, that one *Twissius* a *Dutch-man* relateth in his description of *India* concerning the Kingdom of *Gazaratt*, where for many years he dwelt; that *Cockles*, *Crabs*, and other *shelly Fishes*, are less fleshy and juicy in the *Full Moon* than in the *New*, which is contrary to the nature of all *Regions*. Neither is it less admirable, that on the *shoars*, near to the mouth of the *River Indus* in the same Kingdom, that the *Sea* is augmented and swelleth in the *New Moons*; and not far from thence, in the *Sea* of *Calicut*, the increase is in the *Full Moon*.

Proposition

Proposition XIII.

In the time of the Vernal and Autumnal Equinox, or in the Spring and Autumn, the intumescency of the Sea is greater than in the other seasons of the year, but least in the Solstices.

Cartesius indeed pretendeth to shew a demonstration of this propriety from his *Hypothesis*, but I cannot apprehend it from his words, neither do I see how it can follow from his *Hypothesis*. It is probable that the *Sun* and general winds do very much contribute to this intumescency of the *water*, and seeing that the *Sun* in the *Equinoctials* doth incumb on the middle of the *Sea* of the *Torrid Zone*, therefore either he, or the winds cause that the *Sea* then swelleth more than at another time. But as concerning the *Solstices* we must say, in a contrary mode, or that the same is the cause of the greater intumescency of the *Sea*, in the time of the *Equinoctials* either of the *Spring* or *Autumn*, which is the cause of more frequent rains, winds and inundations in those seasons.

Proposition XIV.

In some parts of the Ocean, Gulphs, and Shoars, great is the encrease and decrease of the water in the influx, and reflux: in other some it is very small, in some not discernable, and so there is no flux and reflux, or intumescency and detumescency.

Those places receive great *Augmentation* and *decrease*, 1. That are under the *Torrid Zone*, between the *Tropicks*, for then the *Moon* pressing for the most part is there carried round. 2. In places that are directly extended from East to West, or nigh the *Collateral quarters*. 3. In those *Gulphs* that are long and less broad, the *Augmentation* is the more sensible. 4. In those places in which few *Islands* or *procurrents* adjoin to the *Earth*.

The greatest flux and reflux hitherto observed, is that which is in the *Streight of Cambaja* in one of the inlets of the *River Indus*, and it hath struck many with admiration, for the water recedeth to an high distance, and that very speedily. Whence not without reason the *River Indus*, or the *Gulph of Cambaja* is thought to be that unto which when that *Alexander the Great* came, and endeavoured to pass his Army over, as it is there related; the water presently went back and left his Ships a ground; hence he went no farther, but judged that the *Gods* had here fixed the bounds of his Expedition, with a prohibition of proceeding any farther. The cause is the small or narrow, and deep depression of the *Channel*; but yet 'tis probable there was some other cause.

At the City *Damman* in *India* not far from *Surat*, the *Altitude* of the water by flux and reflux is varied at two and a half *Orygas*, and the *Sea* departeth from the *shoar* the space of half a mile.

In the *Gulph of Cambaja* the flux augmenteth the *Altitude* five *Orygas*, others say seven, which unusual augmentation hath been the cause of the loss of many Ships by unexperienced *Mariners*; for the water falling, they have been split on the Rocks.

In the *Gulphs* and *shoars* of the *Streights* of *Magellan*, no constant time of the flux and reflux is observed, for sometimes the water floweth and refloweth in three hours, other some in twelve hours; which inconstancy is to be ascribed to the violent irruption of the *Ocean* into that *Streight*, and from the various agitations of the wind.

About *Malacca*, also at the *Streight* of *Sunda*, a notable flux and reflux is observed.

In the *Arabian Gulph*, or *Red Sea*, some of the Ancients have written that there is so great a reflux (as *Scaliger* writeth) that *Moses* and the *Israelites* passed over without any Miracle. But it is false, because the reflux is not there so great as to leave the *Channel* dry.

In Spring and Autumn the intumescency of the Sea is greatest.

The increase and decrease of the water in several parts of the Ocean.

The greatest flux and reflux in the Streights of Cambaja.

Flux and reflux at Damman.

No constant time of the flux and reflux in the Streights of Magellan. The flux and reflux in the Red-sea.

In Full and New Moons, the motion of the Sea from East to West, most violent.

On the Coasts of China the flux and reflux is very sensible, as also at the Isles of Japan.

At Panama on the Coast of America lying at the Pacifick Ocean the Sea is very much exalted, and by and by depressed again; in the full Moons the flux is so much augmented, that water entrencheth into the Houses of the City. Yea in almost all the shoars of the South Sea, the Altitude of the water is wonderfully augmented and diminished, so that in the reflux, the decrease is sensible for two miles. In the Gulph of Bengala at the shoar of Sum. the flux augmenteth the Altitude ten foot.

But in the Mediterranean Sea, which floweth in through the Streights of Gibraltar, from the West to the East the flux is not perceivable, because the situation is contrary to the quarter into which the Sea is moved, and therefore the water of it is little augmented by the flux, so that it is not discernable, unless in the Gulph of Venice, which by reason of its long extension and small Latitude, sheweth the flux and reflux, when in the other part of the Mediterranean Sea by reason of its notable Latitude, that little augmentation and decrease is not discovered. Whence this flux and reflux was unknown to the Grecians, as also to the Romans in the time of Scipio Africanus. And the Grecians as well as the Romans, accounted it as miraculous what sometimes they discovered in other places, as is manifest from the Expedition of Alexander the Great, and of Scipio in the expugnation of Carthage; but in the time of Cicero it was known to the Romans. Yet some observed it a little at Massilia; also at certain Coasts of Barbary, it is noted enough.

In the Baltick Ocean, as also in the whole Northern Sea beyond England, towards Norway, and Greenland, the flux and reflux of the Sea is not yet found out, as neither in the North Coast of the Pacifick Ocean. But the cause is not yet sufficiently known, unless you will say that those Seas are remote from the course of the Moon, and also that they are extended from the West to the East and North; moreover that many Isles, and procreancies of land do hinder. These three must be conjoined to impede the flux of the Sea in these places.

Proposition XV.

The flux and reflux of the Sea is a violent motion, viz. an impulse, but the reflux is a natural motion of the water.

For the flux is caused by the pression of the Moon, or matter between the Moon and the Earth, or also because that the Sea doth not remain in that situation which is received in the flux, this is a sign that it was a violent motion. But in the reflux the Sea is moved from a more high place to a more depressed place, which is the natural motion of water.

Lemma.

The place of the Moon being given in the Ecliptick, and the Latitude and hour of the day, from an Ephemerides, or by Supputation or Astronomical observation, to find on the Terrestrial Globe the place, unto which the Moon at the hour given is vertical, also to exhibit all those places of the Earth unto which the Moon will be vertical that day, viz. one after another.

The use of this Problem is great, yea very necessary in the Doctrine concerning the flux and reflux of the Sea. The mode of performing of the same you shall find in the Nineteenth Chapter, and the Thirteenth Proposition. For there it is more conveniently explained: yet the Explication of that Proposition may be anticipated, and demonstrated to the studios in this Chapter.

Proposition

Proposition XVI.

In those places of the Sea, to which the Moon is vertical, the flux and reflux is greatest, except that there be other impediments, which we have reckoned up in the XIV Proposition. And by how much the parts of the Sea are more remote from the place, by so much the flux and reflux is lesser, other things being equal.

For because in that place the pressure is greater, and the tumour of the water greater, which is more vicine to the Moon pressing, and the Celestial matter; thence followeth that, that the Proposition intimateth the objections concerning some other places, in the comparison of which the contrary is found, are to be excused by the admixtion of other causes.

Proposition XVII.

The quantity of the flux and reflux is unconstant in every place, and divers on several dates, and by so much the greater, or lesser, by how much the Moon is more remote, or near unto that place.

For the Moon every day changeth her place in the Ecliptick, and so on other daies is vertical to other places, and by consequence is more remote from any place, or more near. Which being observed, we conclude from the preceding Proposition, that there is a divers quantity of the flux and reflux in one and the same place, on divers dates, whether that the diversity be sensible or insensible.

Proposition XVIII.

The greatest intumescency of water in any place, and term of the flux, ought to be when that the Moon doth occupy the Meridian of the place. But in many places it is found to be in another situation of the Moon.

For then is the Moon most nigh to any place of the Earth, when that it is in the Meridian of that place, because that the Hypotenusa of a right angled Triangle, is lower than the Cathetus. Whence it is inferred by the XVI Proposition, that when the Moon is in the Meridian, there ought to be the greatest intumescency, and Altitude of water, and immediately a decrease to succeed. But when the Moon is in the lowest of the Meridian, then the narrowest of the vortex of the Earth opposite to it in the upper Meridian; and therefore doth effect the same, as if that the body of the Moon were present.

But here ariseth a great difficulty. For there are many places and Coasts of the Earth, in which we find that the term of the flux is not when that the Moon cometh to the Meridian, (as the Philosophers held before this age) but sooner or later, viz. when that the Moon cometh to a certain quarter, not Cardinal, and this quarter is not constantly observed, but in new and full Moons; for the most part the greatest intumescency is, and the beginning of a detumescency, before the Moon cometh to this quarter or vertical Circle. So at London the water is at the highest when the Moon cometh to the quarter which is between the South and West, or North and East; that is to the South West, or North East quarter. At the Coast of China, in the Port of the City Maccau, a certain Portugall Martiner observed the time of the greatest intumescency by this mode. The Elevation of the Pole is 22 degrees, 20 minutes; in the Year 1584 on the 19 of September, the Moon was at full, then the intumescency or Altitude of the highest water was observed in the morning at $\frac{1}{2}$ or $\frac{1}{4}$ of an hour past 8: therefore then the Moon was removed from the Meridian $3\frac{1}{4}$ hours. Whence the quarter or vertical Circle in which the Moon at that moment of time was, is found according to the Problem of the 30 Chapter.

Anno 1585, on the 16 of February, in the full Moon, the greatest hight of water was observed at half an hour past eleven a Clock at Noon.

The Moon every day changeth her place in the Ecliptick.

See Proposition on 16.

The greatest flux at the Coast of China, observed by a Portugall.

The Sea at the flux much exalted at Panama.

The flux not perceivable in the Mediterranean Sea.

The flux and reflux in the Baltick Sea not yet found out.

See Proposition on 13, in Chap. 19.

Certain observations taken by a Dutch Mariner of the flux of the Sea in many places.

A certain Dutch Mariner on the daies of the new and full Moon, noted the hours of divers places, for the term, or intumescency of the flux, from which I have extracted these.

At the twelfth hour (on the daies of the new and full Moon) on the Coast of Flanders, at Enchusen in Holland, at Horn, at Embden in East Freezland, at the mouth of the Elve, at Eider, at the Isles of Jutland, and at Dover, at England. At 45 minutes past 12 at Flushing in Zealand, half an hour after one a Clock, at the Occidental Coast of the Isle of Wight, at Calis, at the mouth of the River of Thames, at the shoar of Zeland, in the mouths of Scald, in Mosa, and at Gored. A quarter after two, before the mouth of Scald, and the mouth of Mosa. At three a Clock at Amsterdam, Rotterdam, Dort, in Holland, at Newcastle in England, at Arment in Flanders, in the mouth of the River of Burdeaux in the South Coast of Britain, Gallocia, Gascoyn, Biscay, Portugal, and Spain, and on the Western Coast of Ireland, even to Hiltland. A quarter after four in the evening at Roan in France, between Mosa and Rochel, in the River of Burdeaux, in the Bays of the Spanish, Portugal, and Gallician Coast; in the South Coast of Britany in France, Gascoyn, and on the Western Coast of Ireland. Half an hour past four from the Texel, at the South Coast of Ireland. A quarter past five in all the Ports of the Southern Coast of Ireland, at Plymouth in England, and other Southern places of it, even to the Coast of Wales. At six in the evening and morning before Hamburg in the Elbe, before Bremen, the Texel, Antwerpe, in the Channel between England and Brabant, without Sorlis. A quarter before seven in the evening, between Fawick and Vaeltmuya, in the Channel even to Bristol; before St. Nicholas and Podessembe, even to Waymouth, and Hartepole. At half an hour past seven in the Haven at the Texel, at Kilduyna, in the middle of the Channel, nigh Plymouth, and in the Sea, even to the Promontory of the Lizard. A quarter past eight in the evening, nigh the Isle of Wight, in the Channel, even to Bewesier, without the Fly on the Coast of Holland. At nine before the mouth of the River Ems in Freezland, before the Fly, before the Coast of Freezland, at the Eastern Coast of the Isle of Wight. At half an hour past ten before the mouth of the River Thames, on the Coasts of Normandy and Picardy. And at a quarter past eleven a Clock in the River Thames, and other places of England.

A difficult task to explicate the cause of this difference.

Now it is a most difficult task to explicate the cause of this so notable a difference, and that in all places, although it be incumbent on the Philosopher, or Geographer. Yet it is probable that the various windings of the shoars, the situation of the Coasts in respect of the Sea, the obstacles of Islands, the mutual meetings of the water, the distance of the places from the Lunar way, various waies, especially those that are constant and general, the declining of the shoars, and other things, do very much conduce to this propriety of the flux. For example: at the Port of London, in the coast of England, the water encreaseth until the Moon cometh unto the quarter of the South-West, viz. when it declineth from the Ecliptick towards the South; for then water beginneth to flow back again, but not when the Moon cometh to the Meridian. Therefore we say, that whilst the Moon moveth to the Meridian of London, towards Brazile, (or from Brazile towards London) the Sea doth not recede from London, but is yet augmented, by reason that the Coasts of America, unto which the Ocean is moved by the Moon, do repel that water towards England, and this hapneth therefore, because it affordeth not a passage for the water. But why, when the Moon is declining from the Ecliptick towards the North, is the greatest Altitude of the water, and the beginning of the decrease observed, before the Moon cometh to the Meridian, viz. in the North-East?

I answer, that this cometh to pass, because that the Moon is then far more near to England, than when it declineth from the Ecliptick towards the South, and therefore then it more swiftly filleth; but the cause, why then the flux is no longer protracted, even until the Moon cometh to the Meridian, may be, by reason that the Moon forceth the Sea more near the Sea of Mexico, and

and Hudsons Streights, where there is found a great intumescency and detumescency.

On the Coast of China, we therefore say, that the intumescency doth anticipate the appulse of the Moon at the Meridian; by reason that a continuall East wind driveth that Sea towards the West.

But these allegations I leave to be farther examined, by the searchers of nature. But for the finding out of the true cause, it is altogether necessary that we acquire accurate observations how the flux and reflux of the Sea is made in divers places, viz. in what vertical the Moon is in that flux; how the quarter is varied in a divers place of the Moon, as in the full and new; especially in those places where the Moon becometh vertical, also in those which directly respect the East, West, and North. Also that must be diligently observed, how the flux is here made in those hours of the day, whilst that the Moon being in the North part of her Circle, hath not the Sea placed vertically under her, but Lands in a long tract, viz. from Cambaja and China, even to the Occidental Coasts of Africa. For because then that it doth not directly press the water, it being depended over the Mediterranean places; I thence suppose that some variety must happen to this motion. Also what then it doth, whilst the Moon ruling in the South Hemisphere, passeth over the Mediterranean parts of Brazile, or Southern America. Without these observations we shall hardly arrive at the true cause, neither shall we neglect this argument.

Proposition XIX.

The sea floweth to most Coasts in six hours and twelve minutes, and refloweth also in so many hours.

In very few places it floweth in more hours, and refloweth in less: and on the contrary, in very few places it floweth in fewer hours, and refloweth in more: yet so that the time of the flux and reflux (viz. between the two greatest intumescencies) together make twelve hours, with 24 minutes, and two such times make 24 hours with about 50 minutes, (48 $\frac{1}{2}$) and therefore on every day the greatest intumescency falleth out later almost by an hour, because that the Moon almost an intire hour, returneth more slowly to the same Meridian every day.

We have sufficiently explained the first part of the Proposition in the Demonstration of the Eleventh Proposition, although in this demonstration we have taken the Altitude of the Sea, the Moon possessing the Meridian: but in this Proposition, by reason that in the proceeding we have shewed that in many places that Altitude doth happen, the Moon being constituted without the Meridian; we do not reckon in them the hours from the time in which the Moon possesseth the Meridian, but for that time in which the Moon occupieth that vertical place, in the which when that the Moon is, it is manifest that the greatest intumescency is. Yet in these places the period of the increment or decrement doth not exactly observe these twelve hours with twenty four minutes, or twenty four hours with fifty minutes; because that the Moon by reason of its various and mutable distance from the vertex, either in more or fewer hours returneth to the same vertical, which difference notwithstanding is not great.

Although therefore in all places the flux and reflux be complicated almost in twelve hours and twenty four minutes, (when that there are no tempests) also in most this time is equally divided between the flux and reflux, so that in six hours it floweth, and in so many refloweth; yet in some places the time of the flux is unequal to the time of the reflux, viz. more or less. The Ocean entereth Garumna a River in France in seven hours, and refloweth in five. So at the Port of Maccoa, on the Coast of China, the flux is in nine hours, and refloweth in three, yea in less, if that the Eastern winds blow.

On the contrary at the Coast of Zenega (a River of Aethiopia) the Sea floweth in four hours, and refloweth in eight.

The Sea in few places floweth in more hours and refloweth in less.

The flux and reflux of the Ocean at the River Garumna in France.

The causes of these differences are difficult: Some refer them to the swift and valid *efflux* of the *Rivers*, or also to a simple *efflux*; for therefore the Shoar of *Garumna* discovereth the *flux* in seven *hours*, because that its strong *motion* retardeth the *flux*, but yet assisteth the *deflux*; therefore the *Sea* refloweth in five *hours*. Others have added those *hours* to the *flux*, by reason that the *Sea* reflowing from the more Northern place, hindreth least the *Sea* should hinder the egress from *Garumna*, but rather be more forced on it. But I suppose therefore to be, by reason that *Garumna* poureth forth it self by a strong Motion from its inlet or mouth into the *Ocean*, for some distance; this *efflux* is prohibited on some part from the *Sea*, and so the *water* of *Garumna* is at a stand also for some space, before that the *Sea* by reason of the *Moon* entreth its *Channel*.

As for the encrease of *Zenega*, which only hath four hours, whether the cause ought to be ascribed to the extension of the *Channel* from the *West* to the *East*; or unto the swift *reflux* of *Zenega*, which may prohibit the *influx* for two hours; or whether to some other cause, I question, and require a more accurate observation. *viz.* Whether it decreaseth eight hours, or only six hours; and in the other two do neither encrease nor decrease, because the strong flux of the River hindereth the flux.

That also must be considered, that depressed and low places may have the flux in more hours, and the reflux in fewer.

Proposition XX.

Whether the flux doth begin when the Moon toucheth the Horizon, or in the increment be in the place, whose the Horizon is.

So they commonly say : but yet we hold the contrary in those places, in which the *Water* is at the highest, when that the *Moon* is in the *Meridian*. For when the *Moon* declineth from the *Aequator* towards the South, then the *arri-
veth* at the *Meridian* in less than six hours, and therefore the flux should begin when that the *Moon* is yet depressed beneath the *Horizon*. On the contrary, when that the *Moon* declineth from the *Aequator* towards the *North*, the requireth more than six hours to come from the *Horizon* to the *Meridian*; and therefore when that the *Moon* is elevated above the *Horizon* unto the *horary Circle* of the sixth hour, then at length the flux begineth, and so it is observed in most places; but the contrary is at *London*, as we have said in the precedent *Proposition*. And the reason seemeth to require, that although the *Moon* decline from the *Aequator* towards the *North*, yet that the flux should begin in the place where the *Moon* cometh to the *Horizon*; for then the place is distant by a *quarter* from the place unto which the *Moon* is *vertical*. And therefore the pressure of the *Sea* cometh or extendeth hither : and here more accurate observations are required.

Proposition XXI.

The hour being given, in which the greatest or least Altitude of the water is on the day of the new or full Moon in the place where the ordinary flux and reflux is (viz. of six hours, with twelve degrees) to determine the hours of the days following after the new Moon, in which the greatest or least Altitude shall be.

We have said in the foregoing *Propositions*, that the time of the greatest increase and decrease (if we have respect to the middle *motion* of the *Moon* from the *Sun*) in one day after placeth $48\frac{1}{2}$ horary minutes, in half a day $24\frac{1}{2}$ minutes.

If therefore the greatest increase in any place happen on the *day* of the *new* or *full Moon*, on the twelfth hour of the *day*, these hours of encrease shall be on the following *daies*..

The age of the Moon. The hours of the day. Scruples.

1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

Viz. In the end of the first day of the age of the Moon, the greatest Intumescency falleth out later by $48\frac{1}{2}$ Horary minutes. But in practice it is sufficient to add to the hour of the new Moon for the end of the first day 48 minutes, or $\frac{1}{2}$ of an hour.

For the end of the	Hours	Days	Months	Years
for the first	1	1	1	1
for the second	2	2	2	2
for the third	3	3	3	3
for the fourth	4	4	4	4
for the fifth	5	5	5	5
for the sixth	6	6	6	6
for the seventh	7	7	7	7
for the eighth	8	8	8	8
for the ninth	9	9	9	9
for the tenth	10	10	10	10
for the eleventh	11	11	11	11
for the twelfth	12	12	12	12
for the thirteenth	13	13	13	13
for the fourteenth	14	14	14	14
for the fifteenth	15	15	15	15

This Supputation of time supposeth the middle or equal *motion* of the *Moon* from the *Sun*, which notwithstanding is unequal, so that the *Moon* in her *Perigee* departeth more swiftly from the *Sun* than in her *Apogee*, and therefore then the greatest encrease is longer protracted than six *hours* and twelve *minutes*. But when the *Moon* is in the *Apogee* the encrease is more quick. For certain true *Lunary Months* exceed 30 *days*, others are less than 29 *days*, when that the mean of 29 *days*, twelve *hours*, 44 *minutes* is assumed.

But in places where the greatest, or least *Altitude* is made by the appulse of the *Moon* to a certain vertical place, although it be done after the same manner, yet for all that the time is not so accurately discovered.

For neither doth the same time, in which the *Moon* is joyned to the *Sun*, fall out on the *hours* of the *day*, or the same moments of the same *hour* in divers

How this is performed by the *Terrestrial Globe*, we shall shew in the XXX Chapter. And in the Thirty seventh Chapter, we shall treat more of the use of Navigation concerning a more accurate Method

We may also use this method for those places where the time of the *flux* is more or less, than in the time of the *deflux*; so that we are certain of the difference. The consideration of the thing it self and practice will more easily teach this, than our discourse.

Proposition XXII.

The winds do oftentimes protract, and often diminish the time of the flux or reflux in some places: Neither are winds of that place only able to do it, but winds blowing in an other place may also effect the same.

The truth of the Proposition is so manifest, that it needeth no demonstration.

Proposition XXIII.

Great is the variety of peculiar or proper motions of the Sea, viz. in which a certain part of the Ocean is moved either perpetually, or in some certain months.

Peculiar motions of the Sea.

The first of those peculiar motions which are most considerable is that motion, by which part of the *Atlanticke or African Ocean* about *Guinee*, is moved from *Cape Verd*, towards the bending of *Africa*, which is called *Fernando Poo*, thence from the *West* to the *East*, which is contrary to the general motion from the *East* to the *West*; now this motion is vehement, so that it violently rejecteth the *Shoars* approaching to the *Shoars*, unto this *Gulph*, beyond the imagination of the *Mariners* and reputation of their *Voyages*. Thence it cometh to pass, that *Ships* which have sailed in two daies from the *Coasts* of *Mourra* to *Rio de Benin*, (which are one hundred miles) scarcely in six or seven weeks can return from *Rio de Benin* to *Mourra*; except they launch out into the middle *Sea*, which is not easily to be performed, seeing that the *Sea* is moved with a strong motion to the *North-East* quarter from the *Isle* of *St. Thomas* to the *Gulph* of *Fernando Poo*, carrying in with it the *Ships*; although they have a fair *North East* wind: and they can hardly get from that *Coast*, except they be forced thence by those sudden *Winds*, termed *Travados*, which sometimes for some months are less frequent, or not at all. For either they perished by *Shipwreck*, being carried or forced on the *Recks* that lay hidden beyond all expectation, or else the *Seamen* perished by *famine*, being detained in this *Gulph*.

But yet this *Motion* is not common to the whole *Aethiopic Ocean*; but only to that part which adjoyneth to the *Coast* of *Guinee*, even to that *Gulph* or *Bay*; for in the *Sea* it is not found to be above the distance of fourteen miles from the *Shoar*, at the distance of one degree from the *Equator*. Therefore *Mariners* sailing by those *Coasts*, are very cautious not to approach over near unto them, so that they may steer their *Course* according to their *minds* and the situation of the appointed place.

Now it is difficult to find out the cause of this literal motion, especially seeing that the neighbouring *Ocean* is moved by a contrary way from the *East* to the *West*, yet two things may be said.

1. That the *Ocean* being repulsed from the *Coasts* of *America*, floweth back somewhat towards the *East*; and because that the *Aethiopic Ocean* is extended in a long tract to the *Gulph* of *Fernando Poo*, therefore it resloweth into this, which yet is only discovered at the *Shoars*, not in the deep *Ocean*, because in this the contrary motion rendreth it insensible: but towards the *Shoar* the *Sea* is moved more violently, and therefore is chiefly discovered in that *Bay* of *Fernando Poo*, because that the *Sea* by reason of the *Rivers* flowing in with a great violence, is repelled from the *Shoars* of the rest of *Africa* (as of *Congo*).

2. There may be a certain *subterraneous Channel* in this *Gulph* of *Fernando Poo*, into which the *Sea* may fall and attract the rest of the *Ocean* with it.

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Proposition XXIV.

The second peculiar perpetual motion.

About *Sumatra* the *Sea* floweth from the *South* towards the *North*, into the *Gulph* of *Bengala*, and that with a violent motion, so that it is probable that by the violence of the *Sea* this *Gulph* was made, and that the *Chersonesus* of *Malacca* was separated from *India*. Whether the cause be that the *Ocean* which tendeth towards the *West*, be forced from so many *Islands*, and the *Promontory* of the *Land* of *Magellan*; so that it should be carried violently flowing towards the *North*, or whether a *subterraneous Channel* be in that *Gulph*, is to be questioned.

Yet I suppose it is not directly carried to the *North*, but to a *Collateral quarter*, which declineth towards the *West*. Yea, this very same motion is found between *Java* and the *Land* of *Magellan*. Therefore the *Dutch* sailing towards the *Indies*, direct their *Course* to that procurent part of the *Land* of *Magellan*, or the *South* Continent, and then sail from the *South* towards the *North*, viz. to *Java*.

Proposition XXV.

The third special perpetual motion is observed between the *Isle* of *Madagascar*, and the *Promontory* of *Good Hope*; especially on the *Coast* of *Africa*, between *Terra de Natal*, and this *Promontory* of *Good Hope*. This motion is found from the quarter of the *North-East*, to the *South-East* (and from the *North* to the *South*, according to the extension of the *Coasts*) so vehement, that *Ships* with a stiff gale can hardly overcome it, and hold the contrary course to *Madagascar*. On the contrary, those who sail from *Canali*, into *Madagascar*, and *Africa*, towards the *Promontory* of *Good Hope*, without any help of the winds, are carried unto it by the motion of the *Sea* alone. I suppose the cause to be, the forcing of the *Ocean* by a general motion to the *Coasts* of *Africa*, where it findeth a passage. For this motion is not found in the middle of the *Ocean*, or that part removed from the *Shoars*, between *India* and *Africa*, from a *Collateral quarter*. But the *Ocean* is moved from the *East* to the *West*.

Proposition XXVI.

The fourth special perpetual Motion is in the *Pacific Ocean* on the *Coast* of *Peru*, and the rest of *America*, where the *Sea* is moved from the *South* to the *North*: questionless the cause is a perpetual *South* wind; which is found to predominate on those *Coasts*, as we have shewed in our *Chapter* of *Winds*. In the *Sea* remote from the *Coasts* this motion is not discovered, neither this wind.

Proposition XXVII.

The fifth special perpetual motion is observed in the *Sea* on the *Coasts* of *America*, from the *Promontory* of *St. Augustin* in *Brazile*, to the *Isles Antilles* in the *Gulph* of *Mexico* towards *Florida*, that is, from the *South* to the *North*. Peradventure the cause is that the *Ocean* being carried by a general motion towards *Brazile*, is repelled, and by reason that a more free and broad passage is granted towards the *North*, thither is carried. The like motion is observed in the mouth of the *Straits* of *Manilla* near the *Philippin Isles*. So in *Japan* a most strong motion proceedeth forwards from the Port of *Xibuxia* towards *Arima*.

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Proposition XXVIII.

The sixth special perpetual motion of the Sea.

The sixth special perpetual motion is in the Streight Le Maire, where the Mariners of the Prince of Nassau found the Sea to be carried from the West into the East. But one observation sufficeth not, especially seeing that Le Maire writeth the contrary.

More special motions are found in the parts of the Ocean at or near the Coasts, but as yet they are not accurately enough observed, or described.

Proposition XXIX.

Unto the special perpetual motions of the parts of the Ocean, also those do pertain, which great Rivers cause where they exonerate themselves into the Sea.

The River Zaire casts itself with a violent motion into the Sea.

So on the Coast of Africa, Loango, Congo, for ten or twelve miles from the shore, is a strong motion of the Sea, from the Coasts towards the West, because many Rivers, (amongst which is the great River Zaire) cast themselves with a violence into the Sea, and forepel the Sea, which motion is helped by the general motion. Therefore some daies are required that Ships may touch those Coasts, although they may be distant only one or two miles from them.

So at the Isle Lamou adjacent to the Coast of China, the Sea is moved from the shore towards the East, contrary to the general Motion which is from the East towards China: this contrary Motion is caused by the impetuous flux of the great River Thoncoan in China, but in the Sea more remote from China, this motion is obstructed by the general Motion: neither is it discovered, beyond the Isle of Branco.

Hitherto concerning the special perpetual motions: a little must be subjoyned concerning the special fixed, and anniversary motions.

Proposition XXX.

Great is the variety of the special ceasing, or periodical motions; and those periodical fixed, and anniversary motions do all almost arise from anniversary and stated winds. And stated or fixed winds of one place may make the motion of the Sea fixed in another place.

The flux of the Sea in divers places at certain times.

So between the Isle Celebes, and Madera, when that the motion is West, viz. in December, January, and February, the Sea floweth to the South East, or a more near Collateral wind than the East.

So at Java in the Streight Gallappa, when the motion is West, viz. in May, the Sea floweth towards the East, contrary to his general Motion.

At the Isle of Cellan, from the middle of March, to October, the Sea floweth towards the South. on the rest of the Months towards the North, viz. because that in those Months the North winds are frequent, in others the South winds.

Between Cochín and Malacca, the Sea floweth with a Western motion from April to August, contrary to the general motion towards the East: then the rest of the time towards the West the winds assisting the general motion: the Sea floweth here with so great a noise, that those who know not the same, suppose Rocks to be there, against which the waters beat so for some months: after the 15 of February, the Sea is moved from the Maldivian Isles, towards the East, and India, contrary to the general motion.

At the Coast of China and Camboja, in October, November, and December, the Sea is moved towards the North-West; but in January, towards the South-West, with a very swift course to the Sands de Champa, so that they seem to exceed the celerity of a stone that is slinged.

At

At Pulo Cato even unto Varella (on the coast of Camboja) when motions or winds do not blow, the swift motion of the Sea is towards the South; but the motions or winds move towards another quarter.

On the Coast of the Gulph of Bengala, from Patana to the Promontory of Malacca, in November and December, a swift course of the Sea is observed towards the South.

In a motion or wind from China to Malacca, in June, July and August, there is a vehement motion of the Sea from Pulo Cato to Pulo Cambir on the Coast of Camboja.

Many more Examples, but less accurately consigned, are to be read in the Journals of the Mariners.

At the Coast of Aguada de San Bras, not far from the Promontory of Good Hope, this is peculiarly observed, that the Sea is always moved from the East to the West towards the land so much the more vehemently, by how much the Occidental wind opposite unto it is more violent. Questionless some adjacent Coast higher than it, is the cause of it.

Proposition XXXI.

The circular motions of the Sea, termed Whirlpools and Vortices, are threefold: For some only move the water in a round; other some suck in the water, and in certain hours let it forth again; and others suck it in, but cast it not forth. Although without doubt there be a fourth sort in the Channel of the Sea, which casteth out and sucketh not in the waters. Yet I do not remember, that I have read in any Author such a Vortex to be found in the Sea; but many are found on the land.

The circular motions of the Sea are threefold.

The Chalcidican Euripus or Vortex is famous in Greece, especially by reason of the Fable concerning the death of Aristotle; it receiveth water at certain hours, and casteth them out in others.

The Vortex at Norway is the most noted and greatest of all, for it is related to be 13 miles in circuit; in the middle of it is a Rock called Monske. This Vorago in six hours sucketh in all that approacheth near it; as Water, Whales, laden Ships, and in so many hours vomiteth them all out again with a great violence, noise, and circumgyration of water. The cause is unknown.

Between Normandy and England is a Vorago or Whirlpool, unto which Ships are carried with a great swiftness, and being near the Whirlpool are repelled back again.

Proposition XXXII.

The motion of the Sea, which we call a Concussion or Trembling, cometh from a spiration or wind, which moveth the Earth or Water it self, and causeth it to rise.

On the Coast of Biscay is a place which the Inhabitants call Capbreton; there sometimes the Sea swelleth without any winds, so that it seemeth to overflow the shore it self, and on a sudden falleth low. The like intumescency is found in a Lake of Scotland, called Loumond, moved by a subterranean wind.

Of the concussion of the Sea, and its cause.

The Portugals in Anno 1523, in the Sea of Cambaja discovered a trembling of the water; for in a great calm (as Massens writeth) all winds being still, the Sea on a sudden swelled from the bottom; thence the Ships began to roul, and to fall foul of one another, to their great astonishment: Now in this great confusion and disturbance, some cast the lead, some pumped, others more wife bethought themselves of escaping, and got barrels on which they might swim; but on an instant it was found to be an Earthquake, which thus also disturbed the Ships on the Sea as well as the Land.

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Proposition XXXIII.

Why the Pacifick Ocean is more calm, and without great floods or waves; and why it is easily moved, or rough with a wind.

The cause without doubt is, because its motions towards the West are not hindered by the intercourse of *hoars*, as the *Atlantick Ocean* is.

C H A P. XV.

Of Lakes, Pools, or standing Waters, and Marishes.

Proposition I.

Definitions.

A Lake is a quantity of Water in any cavity of a Mediterranean place, of a notable amplitude and tract, on all sides encompassed with the Land, and at the least having a moderate profundity: But more properly, that is termed a Lake which receiveth in, and letteth forth Rivers.

A Pool is a small Lake, which doth never receive or send forth Rivers.

A Marish is water in a Mediterranean place, here and there having the lands extant and about it, or mixed with the Earth.

Proposition II.

Lakes are Fourfold: 1. Some neither send forth or receive Rivers, and such Lakes, if small, are termed Pools; but if large, they are called Lakes. 2. Some send forth Rivers, but receive none. 3. Others receive Rivers, and send forth none: And 4. some both receive and send forth Rivers; and some of those send forth greater than they receive, some equal, and some lesser. Also some send forth a River almost in the same line with that which they received; others in another line, or to another quarter: also some receive more than they send forth; some more few, and some equal.

Proposition III.

To declare the generation and conservation of those Lakes, which neither send forth nor receive Rivers.

Those Lakes are either great, moderate, or small. Some of the moderate and small perpetually remain so in the Summer; and when it hath not rained for a long space, are dried up; and both these are termed Pools. Now it is easy to declare the generation of those that are dried up, viz. the plenty of rain, and cavity and depression of the place in which such standing Pools are: For if that any place be situated in the midst of elevated places, all the rain-water runeth unto it, and so causeth a Pool.

So in India there are many Pools or standing-waters made by the industry of the Inhabitants, whereof some are in compass a mile, and some two, encompassed with a Stone-wall, which are filled in the Pluvial months, that in the Summer months they may furnish those with water, who live far from Rivers or Fountains.

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After the like mode small Lakes and Pools are made by the exundations of the Sea and Rivers.

So the River *Nilus* and *Niger* exundating, when that they have reflowed, leave many Pools behind them, which either the Natives fortifie or make, that thence they may draw water on the other Months of the year. For the same reason, in *Moscovia*, *Finland*, *Lapland*, in the Spring, Summer and Autumn, are many Lakes, partly by reason of the shores, and partly because of the dissolving of the Snows and Ice. But although some Lakes be dried up in the Summer, and after a long cessation of Rains; we may not thence firmly conclude, that they had all their waters from those Rains, for they may be dried up.

As for other Lakes without Rivers that are not dried up, their generation may be also referred to the Rains, viz. if that they have a profound Channel, in which so great a quantity of water collected from Rains may be kept, as that the heat of the Sun is not of force enough to consume it all before that another Rain falleth: but it is more probable, that these Lakes have peculiar Rivulets in the bottom, from which they receive so much water, as is consumed by the exhalation. And this cause alone taketh place in those Pools that are found on the tops of Mountains; as in the Mountain *Brutternus* in *Cenifus*, and others. Now it is probable, that some of these also were generated long since by a great inundation of Waters, and thence conserved by Rivers: nay, without question some of these Lakes that are near the Sea, and also salt, had their being from some inundation of the Sea through some passage; as the Lake *Harlem*, and others in *Holland*. There are also many salt Lakes in *Peru*.

Neither is there any great number of these Lakes without Rivers; some small ones are found in *Moscovia* and *Finland*, the Lake or Pool *Lychnitis* in *Macedonia*, the Lake *Appollonia* in *Mysia*; one in *Carniola*, called *Zrinzee*; a round one in *China*; another called *Hilam* in *Cochinchina*; one in *Zanbaga*; one at the City of *Mexico*, twelve Leagues in length. All these are small, except that in *China*, in comparison of great ones.

There is only one great Lake of this kind in the whole Earth, and which exceedeth all others, to wit, that of *Parima* in *America*, which is about 300 miles in length, from East to West, and about an hundred in breadth, where broadest; yet nevertheless it doth not receive, nor send forth any Rivers. How it had its original, is no mean doubt; whether long since caused by the inundation of the Ocean, or flowing from some subterranean Fountains or Springs? Also, whether it be conserved by Rains, or from the same Springs? It seemeth to me probable that it hath Springs at the bottom, that supply as much as the heat of the Sun consumeth.

Proposition IV.

To declare the generation and conservation of those Lakes that neither receive, nor send forth any Rivers.

There is an infinite number of these Lakes, seeing that most Rivers flow from Lakes, as from Fountains or Springs; especially those that arise in *Moscovia*, *Finland*, and *Lapland*, viz. where there is any cavity in the place of a Spring, but not so large as to contain a quantity of running water; then it becometh a Lake: thence proceeds a River, the water gliding to the adjacent places. Neither may we doubt, but that these Lakes have their generation and conservation from Springs in the bottom, whether it be a true Spring, or an apparent Spring, viz. Water flowing from another place thither through a subterraneous passage; which last appeareth more probable in reference to certain Lakes which immediately send forth great Rivers. Of such small Lakes there is a great multitude, as I have said; as *Volga*, from whence is the first original of the River *Volga*; *Odoium*, from whence floweth *Tanais*; *Adac*, the original of one of the branches of the

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Of Lakes.

Pools.

Marishes.

Lakes are fourfold.

In India are many Pools.

Not many Lakes without Rivers, and those not large.

The Lake Parima the greatest Lake.

Of the Generation and Conservation of Lakes, that neither receive nor send forth Rivers.

the River *Tigris*; *Osera* in *Moscovia*; the Spring of the River *Sofnam*, which is discharged into *Volga*; and many other small ones, we only reckon up the greatest of most note.

1. The famous Lake *Chiamy*, not far from *India*, in the latitude of 31 degrees, from which run four Rivers of note, magnitude, and inundation into the Kingdom of *Sian*, *Pegu*, and the like, viz. the Rivers *Menam*, *Axa*, *Colum* and *Martavam*; but some Maps have a very small River which runneth into this Lake.

2. The Lake *Cheuyhay* in *China*, which sendeth forth a great River towards the North, which joyned with another entereth *China*.

3. The Lake *Titicaca* in *America meridionalis* of 80 miles compass; it sendeth forth a great River, which terminateth in a small Lake, neither is it seen any farther: and about this Lake are many Cities and Towns.

4. In *Nicaragua* in *America* is a Lake so called, about four miles from the *Pacifick Ocean*, and 100 miles from the *Atlantick*, into which it runneth in a great Channel.

5. The Lake *Iroquois* in *Canada*, the original of the River of *St. Lawrence*.

6. The Lake *Annibi* in *Asia*, under the latitude of 61 degrees.

Proposition V.

To declare the generation and conservation of those Lakes that receive Rivers, and let out none.

Now it is manifest, that these Lakes are generated and conserved from those Rivers which they receive, and that flow into them: For when that Rivers having gone from their spring, and arrived in their passage at any noted and ample cavity, the water is collected in this, and maketh a Lake.

Now if the Earth at the bottom prove porous, it sucketh in the water, and transmitteth it to the adjacent Earth, or that which I suppose to be more frequent, if there be a Subterraneous passage, or that such an one be caused by the water; through this part of the flowing water is carried away, so that on that account the Lake doth not flow over.

Of these kind of Lakes there is but a small number on the Earth.

1. In the preceding Proposition we have said, that the Lake *Nicaragua* sendeth forth a River, which endeth in a small Lake; this Lake therefore shall be one of this number.

2. The Lake *Asphaltites* in *Palestine*, termed also the *Dead-Sea*, receiveth the River *Jordan*, but sendeth forth none; it is seventy miles long and five broad.

3. A small one in *Asia minor*.

4. A small one in *Macedonia*, called *Janna*, which receiveth little Rivers.

5. The Lake of *Geneva*.

6. A Lake in *Persia*.

7. The Lake *Soran* in *Moscovia*, which receiveth two small Rivers.

8. The River *Ghir* in *Africa*, rising in *Mount Atlas* endeth in a Lake, as *Leo Africanus* writeth, and so some Maps do represent it; but others bring the River into *Nubia*.

Proposition

Proposition VI.

To explain the generation of those Lakes, which both receive and send forth Rivers.

There is a threefold difference of them, as we have said in the second Proposition; for either they receive a greater quantity of water than they send forth, or an equal quantity, or a lesser. If that they send forth a greater quantity, it is manifest that that Lake hath occult springs. If less, it is a sign that there are secret *Aqueducts* in the bottom, or a spongy Earth: but if it be equal, we gather that there are neither occult *Aqueducts* nor hidden springs in the bottom. The cause of the generation therefore is partly the same, which we shewed in the fourth Proposition, viz. the cavity and depression of the place, and the quantity of water, unto which are adjoynd occult springs and much rain, and dissolved Snow and Ice help on the same.

Those that are generated from the influx of one River, they are placed in the middle tract of the Rivers, and render the Rivers directly, and of these there are a great number. So the River *Niger* maketh four Lakes in its passage. The *Nile* maketh many Lakes in its passage, which the Maps do not shew. The River *Duina* passeth through six or seven at least: and you shall see other Rivers in *Moscovia* and *Finland*, in the great Maps, to make sixteen Lakes before that they come to their mouth. But it is best to consider those, which produce other Rivers than they have received.

The most famous for magnitude are these:

1. *Zaire*; a Lake of the procurant of *Africa*, lying between the thirteenth and sixth degrees of South latitude, and therefore in Longitude hath 105 miles; in the midst of it lieth an Island (besides other small ones) of that magnitude, that they can bring into the field at least twenty or thirty thousand fighting men. This Isle doth in a manner twice cut the Lake, so that one part is accounted for a peculiar Lake, it is called *Zemhre*: from this Lake flow three mighty Rivers, *Nile*, *Cuama* and *Zaire*; but certain small Rivulets do flow into the same, which do not only seem sufficient to supply the greatest of the same; so that it is probable, that it hath certain springs at the bottom, although the inundation to be ascribed to be the showers that fall in the pluvial months.

2. *Zaslan*; a Lake not far from *Zaire* between the tenth and sixth degrees of South latitude, and therefore about sixty miles in Longitude: It sendeth forth a branch into the *Nile*, and receiveth small Rivers.

3. The Lake *Sachaf*, not far from *Zaire*, towards the Promontory of *Good hope*, sendeth forth a Rivulet, which being augmented with other waters, at length maketh the River of the holy Ghost: It receiveth small Rivers.

4. The Lake *Aquilunda* receiveth a branch from the Lake *Zaire*, and sendeth forth many Rivers into *Congo*.

5. *Onega*; a Lake in *Finland*, between the 60 and 63 degrees of Latitude, hath 44 miles in length and 30 in breadth, where it is at the broadest: It receiveth many small Rivers, which proceed from other Lakes, and sendeth forth the moderate River *Sueri* into the Lake *Lodoga*.

6. The Lake *Lodoga*, 30 miles long and 15 broad; it receiveth the River *Sueri* from *Onega*, and many lesser from other places; a moderate one from *Imen*, a noted Lake in *Moscovia*. It sendeth forth a River into the *Baltick Sea*.

7. The Lake *Osera*, receiveth the River *Kousam*, and others, and sendeth forth *Sofnam*, which runneth into the *Volga*.

8. *Enaraok*; a Lake or Marsh in *Lapland*, in length 40 miles, in breadth 15: It receiveth the River *Avilan*, and other lesser Rivers, and sendeth forth the River *Paes* into the *Lappian Sea*.

Of Lakes, which both receive and send forth Rivers.

The Lake *Zaire*.

The Lake *Zaslan*.

The Lake *Sachaf*.

The Lake *Aquilunda*.

The Lake *Onega*.

The Lake *Lodoga*.

The Lake *Osera*.

The Lake *Enaraok*.

The Lake *Ula*.

9. *Ula*, a Lake in *Moscovia* 30 miles long, and 15 broad; it hath in the midst of it an Island, as in the Lake *Zaire*: It receiveth a River that passeth through 10 Lakes, and sendeth forth a famous River. There are many more in *Moscovia*, *Finland*, and *Norway*.

Lakes in *China*.

10. In *China* are four famous Lakes, which receive Rivers, and again distribute them into divers parts.

Lakes in *Brasil*.

11. In *Brasil*, in the same manner as in *China*, are the Lakes *Euparia*, and *Puerto de los Reyes*, in which the Rivers *Argenta* and *Omoranna* do meet and pass through.

Proposition VII.

Many Lakes contain fresh Water, very few salt or Marine.

Divers Lakes contain fresh-water, very few salt.

Those that have their being from *Rains* or *Rivers*, as also those that have their own proper *springs* more remote from the *Sea*; but those that are caused by an inundation of the *Sea* through a certain passage, are *salt*, as also some which have springs of *Salt-water* in the bottom: So the Lake *Harlem* and others in *Holland*, are *salt*. There is a *salt Lake* found in the Isle of *Madagascar*, in *Peru*, in *Cuba*, which hath two Leagues in circuit, situate not far from the *Sea*, and although it receive certain Rivers of *fresh-water*, and breedeth *Fish* and *Tortoises*, yet it is *salt*. So the Lake *Asphaltites*, although it receive the *fresh-water* of *Jordan*, yet it is not sweet, but sendeth forth so stinking and violent a vapour, that the circumjacent land for the space of half a mile is barren.

Proposition VIII.

Whether the Caspian Sea be a Lake, Streight, or Gulph of the Ocean.

The Caspian Sea, whether a Lake, Streight, or Gulph.

Some will have it to be properly termed a *Sea*; but no *Sea* can properly be termed a *Sea* except it be a part of the *Ocean*, that is, except it doth adhere to the *Ocean* by some manifest tract; but they will have it joyned to the *Ocean* by some *subterraneous passage*. The *Ancients* indeed would have it to be joyned with the *Indian Ocean*, others with the *Northern*; but experience sufficiently sheweth both to be deceived. Concerning a *subterraneous passage* the matter is uncertain; yet it seemeth to be probable from thence, that it receiveth so many *Rivers*, and those noted for great quantities, which quantity of *water* the Channel could not possible contain, except that it exonerated the same by *subterraneous Caverns* and *passages* into the *Ocean*. But others suppose that quantity of *water* otherwise to be consumed, viz. that it penetrateth not into the *Ocean*, but into the vicine *Mountains*, of which there is a great number, and almost all send forth *springs*. *Scaliger* and others assert, that this *Caspian Sea* is carried by a *subterraneous passage* into the *Euxine Sea*; but he alledgeth no probation of it: yet that may be a sign, by reason that the *Euxine Sea* perpetually sendeth forth *waters* in great abundance through the *Bosphorus*, which abundance of *waters* some think that it doth not receive from the *Rivers*, but by a *subterranean passage* from the *Caspian Sea*: But it seemeth not so to me to have any conjunction with the *Sea*, and therefore I suppose it to be a *Lake*, and so rather to be called, than a *Sea*. Now whence it was first generated is a greater difficulty: Some say, that great *Mountains* of *Salts* are found in its bottom, and that thence it hath its saltness; but the *water* they suppose to proceed from the multitude of *Rivers* that exonerate themselves into this *Lake* or *Sea*. Yet although these *waters* make to the conservation of it; yet I think it more probable, that this *Sea* for some Ages since was conjoynd to the *Ocean*; neither do I question but that the *Euxine Sea* will at length become a *Lake* for the same reason, the *Bosphorus* being obstructed.

Proposition

Proposition IX.

To make a Lake in a place, if that it be possible.

It may be done, if that there be a *River* in the land adjoining, or that a Spring be found in the place, and that the place be somewhat more depressed and low than in the adjacent places; although small *Lakes* may be also made on the tops of *Mountains*: therefore the place must be hallowed, and the earth dug away unto so great a depth and amplitude as we require, and its sides must be fenced with *banks* upheld by *wood*, if need so require; then an Inlett being made from the Channel of the *river*, the *water* must be let in; or if that a Fountain in that place affordeth a sufficient quantity of *water*, there is no need of that inlett or *aqueduct*.

Of making Lakes.

Proposition X.

To take away, or dry up a Lake.

That may be performed two ways; 1. If the bottom of that *Lake* be higher, or of almost an equal depression with the vicine place, an *Aqueduct* being made, the *water* will flow from the place or *Lake*, and at length will render the bottom dry, the heat of the *Sun* assisting, and *Earth* being cast in. 2. If that the bottom of the *Lake* be lower than the vicine place, it must first be fenced with a trench in its whole circuit, leaving only some *Channels* or open passages; then making use of *Water-mills*, the *water* must be expelled and drawn out, and then the bottom must be covered with *earth* and *dung*, and such seeds cast in, which suddenly will take root, as *Mustard-seed*, *Coleworts*, and the like. By this mode the *Dutch* very well know how to drain *Lakes*, and to make fruitful lands of them.

Of drying up of Lakes.

Proposition XI.

Marishes are of two sorts; some are ouzey, and consisting of a mixt substance as it were, viz. of Water and Earth, so that it will not suffer the footsteps of a man: others have small standing Pools, with small portions of dry land here and there.

Of the first sort are those that receive or send forth no *Rivers*; such *Marishes* are in *Holland*, *Brabant* (where is the *Marish de Peel*), and many in *Westphalia*, to which some of the second sort are admixed. But many of the second kind are found at the originals or *springs* of *Rivers*, whence some are wont to call these Springs or Fountains, *Marishes*; as the *Marishes* of *Tanais* in *Moscovia*, of the *Nile*, &c. Such *Marishes* also seem to be in *Saxolax*, a Province in *Finland* in a great tract of land; also the *Marishes* of *Enarack*; the *Chelonides* *Marishes* of *Africa*, the *Marishes* of *Chaldea*, through which the *Euphrates* doth pass. These *Marishes* are frequently found in *Woods* and *Desarts* that are *Ericose*, because that the *rain* which irrigateth those *lanes*, and collecteth in its cavities, is not attracted by the *Sun*, by reason that the *Leaves* of *Trees* do repel its Rays. Such kind of *Marishes* are found here and there in *Germany* and *Moscovia*.

Marishes are of two sorts.

Moreover these *Marishes* of the second sort are four-fold; viz. some both receive and send forth *Rivers*; some only receive, some only send forth, and some neither receive nor send forth. The first sort are generated and conserved, partly by occult *springs* and *water* effused before that it be brought to a certain Channel, and also from a greater quantity of *water* than can possibly be brought through a Channel; many of which sort are in *Moscovia* and *Finland*: *Marishes* of the last kind probably are conserved, and spring from *rain* and small *springs*. *Aristotle* calleth the *Palus Maotis* a *Lake*, and that more rightly.

Propo-

Proposition XII.

Marishes have a sulphurous, bituminous, and fat Earth.

Of the earth
of Marishes.

This is discovered both from the black colour, and from the Reeds which are generated from it, and easily take fire, as is found in *Holland* and other places. The cause is, by reason that such substances are contained in the raise of the *earth*, where these *Marishes* do exist. Yet all *Marishes* are not such; but where the Earth is stony and hard, there are no *Marishes*: for where there is a soft *earth*, there for a certain is a fat and sulphurous substance.

Proposition XIII.

To drain Marishes and Fens.

Of draining of
Fens.

Although some *Fens* have an high profundity, yet no more is required to drain them to such a depth; which we may do, if that we cause the *water* to flow away by some *Channel* or *Aqueduct*. 2. If that after some *weeks* they have been dried by the *Sun*, we cast in a great quantity of dry *earth*. 3. If that we make a fire upon them: and 4. If that we hinder *water* from flowing into them; as *rain*, and the like.

CHAP. XVI.

Of Rivers in General.

Proposition I.

We comprehend in this Proposition the definitions necessary for this doctrine.

Of Rivers, and
their definition.

1. A *River* is *water* flowing from a certain place of the *Earth* to another place in a long tract, and within its *Channel*. A *Channel* is that cavity in the *Earth* in which the *water* is contained, which is more depressed and lower than the *shore* of that *water*.
2. A *Rivulet* is a *River* that hath not the profundity and breadth, as to admit of small laden *Vessels*.
3. That is termed *Amnis* which admitteth of those *Vessels*; but if they will bear moderate *Vessels*, great ones laden, then it is called by the general term of *Fluvius*, and *Flumen*.
4. That *water* is termed a *Torrent* which floweth from the Mountainous places with a violence.
5. Where two *Rivers* meet, that place is called a *Confluence*.
6. A *River* or *Rivulet* which floweth from another, is termed a *Branch* or *Arm*; yet for the most part it is taken for such an *arm* which is lesser than the other part of the *River*. Yet those are also frequently termed *Arms* which proceed from a *River* divaricated into two *Channels*.
7. A *Fountain* or *Spring*, is *water* bubling and flowing forwards from a certain place of the *Earth*.
8. A *Well* is, when the *water* bubbleth up, but floweth not forwards.

Pro-

Proposition II.

Torrents and Rivulets may sometimes proceed from a quantity of rain, and dissolved Snow.

For in the Mountainous, or more elevated parts of the *Earth*, are found many *Cavities*, small *Lakes*, and standing *Pools*: Now if that so great a quantity of *water* flow into these from the falls of *Rain* or *Snow*, that they cannot well contain them, they overflow and run down on the more depressed places; and because that on every year this happeneth, it maketh a *Channel* for it self: but sometimes *Torrents* do flow without any *Channel*. From this cause, *viz.* *Rains* and the dissolution of *Snow*, many *Rivulets* are made also *Torrents*, and moderate or indifferent *Rivers* in those places, which have ridges of Mountains in a long tract, as the *Procurent* of *Africa*, *India*, *Peru*, *Sumatra*, and the like. And these *Rivulets* flow neither in the *Summer*, nor in the *night*, but only in the *day*.

From whence
Torrents and
Rivulets do
proceed.

Proposition III.

Most *Rivulets* proceed from *Fountains*. But *Rivers* of a great magnitude, have their Original either from the congregate of many *Rivulets*, and indifferent *Rivers*, or flow from *Lakes* and *Marishes*. For no *Rivers* of any considerable magnitude (as the *Albis*, the *Rhine*) do flow from one *Fountain*, but exist from many small *Springs*, or *Lakes*: But these proceeding from *Lakes*, are augmented by the accession of other *Rivers*. The *River Volga*, or *Rha*, receiveth two hundred and more partly *Rivulets*, and partly indifferent *Rivers*, before that it dischargeth it self into the *Caspian Sea*; and the *Danube*, as many before the flow into the *Pontus*.

Rivulets pro-
ceed from
Fountains.

And although that *Pliny* and *Cardan* write, that no *Rivers* flow into the *Nile*, yet experience testifieth the contrary to them that have travelled in *Abyssine*. The *Proposition* is easily proved by an enumeration of *Examples*.

The *Springs* of some *Rivulets* and *Rivers* are in Mountains, and elevated places; and some on a *Plane*. As for the *Springs* of those *Rivers* that proceed from *Lakes*, we have said in the former Chapter, that those *Springs* are in the bottom, or *Channel* of the *Lakes*: and that such *Lakes* are as it were *Conduits* and *effusions* about the *Spring*, before that the *water* floweth in a *Channel*, or in a greater quantity. For some *Springs* are covered with *Earth* or *water*, others open.

Springs pro-
ceed common-
ly from Hills
& Mountains.

The *Springs* on a *Plane* are of those *Rivers*, from which *Tanais* and *Albis* exist in their first tract, unto which others do accede. It were easie to collect other *Examples*.

Cardanus denieth these *Fountains* to be generated in these plane places, but to be derived from the vicine Mountains, by some *subterraneous passage*. But I suppose that such *Springs* first make a standing *Pool*, or *Marsh*. For *Tanais* seemeth not to flow from a *Spring*, but from a *Marsh*, or some less profound *Lake*.

Many are the Mountainous *Springs* of *Rivulets*, as of those of the *Rhine*, *Po*, *Danube*, *Borysthenes*, &c.

The *Nile*, *Volga*, and the great *River* of *St. Laurence* in *Canada* flow from a *Lake*.

Yet there is one *mode*, by which from one *Fountain* a great *River* may proceed, *viz.* if that the *Fountain* be on an *Elevated* place; but the *Channel* of the *River* must be a little higher than the *Altitude* of the inlet

Q

inlet. So the flowing water, first in a more swift Current, then in a more slow, is collected in the *Channel*, and in course of time may be a very great River, by reason that so much did not flow out in the first generation.

Proposition IV.

Rivers are very much augmented by frequent Rains, and dissolved Snow, and that in divers seasons and months of the year.

Rivers are much encreased by rain and snow.

So in the *Region of Peru, and Chili*, some Rivers are so small that they flow not in the night time, but only in the day; because that then the water floweth from Snow dissolved on the Mountains of the *Andes*, through the heat of the Sun. So the Rivers both in the *Oriental and Occidental Coast* of the procurrence of *Africa*, as in *Congo, Angola*, and the like, are bigger in the day than in the night. So it is also in the shoars of *Malabar*, and *Chormandel in India*. Yea in those four *Regions* in *Summer* time the Rivers are almost dried up, and in the *Winter*, or wet season, are overflowing. So *Volga* in the Months of *May*, and *June*, aboundeth with water, so that the *Lands and Islands*, are then covered with water, in the other Months the Sands will hardly admit a passage over them for Ships that are laden. The reason is, because that then, the Snow is dissolved on the Mountains, whence those Rivulets proceed, which being more than one hundred, do exonerate themselves into the *Volga*. So the *Nile, Ganges, Indus*, &c. are augmented from rains, or Snow: so that they overflow the *Lands*. But these augments happen in a different season, because that they arise from divers causes, and divers places; for by reason that rains are more frequent in the *Winter*; therefore Rivers are more high at the season, except another cause intervene from the dissolution of Snow, which sometimes happeneth in some places and Mountains in the *Spring*, in others in the *Summer*, and in others in the intermedial time, by reason that the Snow is then dissolved on the Mountains that are adjacent to the Rivulets of these Rivers. Moreover some Rivers, especially the greater, proceed from remote places, where it is then *Summer*, when it is *Winter* in the place through which they flow; and those variations cause the swelling of Rivers in divers seasons. But most Rivers do so in the *Spring*, because that then Snow is dissolved in most places. The variety of these causes must be shewed in the particular description of every River.

Concerning that peculiar *Spring of Japan*, which floweth every day only for two hours, we shall speak in the following Chapter.

Proposition V.

What may be the Original of that water which floweth from Springs? Or whence are Rivers generated?

The cause of water flowing from Springs.

We have before our eyes the great River *Rhine, Albi*, and others, the generation of which by reason of their abundance of waters, seemeth more admirable than that of Rivulets: but we have shewed in the precedent and third Proposition, that the water of Rivers partly proceeds from Rain, and the dissolution of Snow, partly from Lakes, and partly from the meeting of Rivulets and Rivers. Therefore the question is not so much concerning the Rise and Springs of Rivers, as the Original and perpetuity of Fountains and Springs.

The Opinion of Philosophers, and Geographers, are various.

The Opinions of Philosophers and Geographers concerning it are various.

1. Some

1. Some think that all the water of *Springs of Rivers* proceed from *Rain*, or dissolved *Snow*. And this they take for a sign of it, that *Rain*, and dissolved *Snow* do much augment the *Rivers*, that oftentimes they extend beyond their *Channel*, and overflow *Regions*: also that *Rivers* do much decrease, and some lesser sort of them are altogether dried up, when no *Rain*, for a long while in the *Summer season*, hath fallen; because that their *Channel* is not very profound, and therefore have collected little water: but those that have a deep *Channel* are not dried up in the *Summer*, by reason that they have gathered so much water from the *Rains* that fell, and dissolved *Snow*, so that all cannot be turned into vapours, except by a daily and continual heat. 2. Because that there are very few *Rivers* in those places where there is little *rain*; as in the more inward part of *Africa* there are few *Springs*.

But these allegations resolve not the question, because we are not to demand, or seek the Original of *Rivers*, but only the Original of the *Water of Fountains*. Therefore those that speak thus, have not well considered the sense of the question, as we have taken notice before; although also the experience that they alledge, is not general, because that there are *Rivers* found in places, where there is little *rain* and no *snow*; although it be true in the *Region of Peru, and Egypt*, which they assert. Moreover *rain* moistneth not the *Earth* above ten foot deep: but *Fountains* spring from a far greater profundity.

2. Others suppose, that we should not demand whence the water of *Fountains* doth arise, by reason that water is an Element as much as *Earth, Air*, and *Fire*, concerning the Original of which we do not dispute; thus *Seneca* discourseth. But other Authours cut in twain this *Gordian knot* with the Sword of *Alexander*. For it is not enquired after, how that water hath a Being, but how it cometh to the places of Fountains, and not to other places. Moreover, the *Earth* doth not so flow forward as *Rivers* do. But for the *Air*, it is false that we should not seek concerning it, as they determine.

The Opinion of Seneca.

3. *Aristotelians* follow the opinion of their Master, who in the whole *Eleventh Chapter* of his first Book of *Meteors*, endeavoureth to prove, that the water of *Fountains* is generated from *Air*, contained in the bowels of the *Earth*. He alledgeth these reasons; 1. *Waters* are generated from *Air* above the *Earth*, viz. *Rain*: therefore seeing that *Air* is in the bowels of the *Earth*, and that there is the same cause of condensation, viz. Cold: therefore he saith it is absurd for any one to think that water is not produced from *Air* there. 2. Experience testifieth that more great drops that fall, are made of small ones, and therefore the Original of *Rivers* must be, as it were, certain *Brooks of water* that meet in one part of the *Earth*; for therefore those that make *Aqueducts*, are wont to bring the water down by *trenches*, and small *Channels*. 3. Because that many *Springs*, and those of the greatest *Rivers* are found in mountainous places, very few in *Plains*, or *Valleys*: which is an evidence, that the water of *Fountains* proceedeth from a condensed *Air* or *Vapour*; which *Air* and *Vapour* tend towards higher places, and mountainous places are as it were sponges incumbering over lower places. Those are the reasons of *Aristotle*.

See Aristotle lib. 1. Chap. 11.

4. *Cardanus* with others, suppose, that the water of *Fountains* proceeds from Rivulets, which are generated of watery vapours, condensed both within, and without the *Earth*, but that these *Fountains* alone scarce make up *Rivers*, unless assisted by *rain*, or dissolved *Snow*. His Reasons are these, 1. If betimes in the morning one view the *Mountains*, they will appear moist. 2. *Rivers* overflow in the morning, and so much the more, by how much the part of it is more near the *Fountain*.

The Opinion of Cardanus.

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But

But the perpetual and constant *impetus* of the *water* bubbling and leaping from the *Springs*, doth not seem to have its Original from so weak and inconstant a cause. Neither doth this opinion of *Cardanus* much differ from that of *Aristotle*; but that *Aristotle* placeth *Air* with the generation, *Cardanus* *vapours*, with the generation, to be the cause of *Springs*; and indeed small is the difference between *Air* and *vapours*.

5. Some of the *Ancients* supposed *Rains* to be coacervated within the *Earth* in Cavities, and thence to break forth as from a mighty belly, and that all *Rivers* sprang from one of them, or from some other of them; neither that there was any other *water* generated, but what were collected in the *winter months* into those receptacles, they supposed to evade into the multitude of these *Rivers*, and therefore that they flowed more in the *winter* than in the *Summer*, and that some were continual, and some not. They added the same cause that we have laid down in the first opinion. But *Aristotle* receiveth this opinion, because that more *water* in one year floweth out from the mouth of the *River*, than the bulks of that whole part of *Earth*, or *Land*.

6. Of Modern *Philosophers* many, as also of the *Ancients*, determined that the *Earth* again received whatsoever *waters* flowed out from the mouth of the *Rivers* into the *Sea*. For the *water* of the *Sea* by an hidden passage went under the *Earth*, and is beaten in its passage through divers windings of the *Earth*, and strained through *Sand* and *Chalk*, which removeth its saltness, and so passeth into pure water. I also defend this opinion, and suppose it true, yet so as not to exclude the cause laid down in the first and third place: the reasons are these. 1. Because more than one thousand *Rivers* exonerate themselves into the *Sea*, and the greater of them in such an abundancy, that that *water*, which they send forth into the *Sea* throughout the whole year, exceedeth the whole *Earth*; as the *River Volga* into the *Caspian Sea*, and also other *Rivers*. Therefore it cannot otherwise be, but that *water* must be sent forth into many places of the *Earth*, even to the *Fountains of Rivers*. Now if that this were not so, we could not possibly imagine, how that the *Sea* should not be augmented unto an immensity, or why *Fountains* should not cease to send forth water. Neither may it be objected, that so many vapours are elevated from the *Sea*, that are equivalent to the *water*, that the *Sea* hath received from the *Rivers*. For first, only *Rain* maketh those *vapours*: then again it is most false that so great a quantity of vapours should be elevated from the *Sea*, as are generated from the *water* which floweth from the *Rivers* into the *Sea*.

2. This opinion is proved from that, to wit, that the *Fountains* near the *Sea* are *salt* and *brackish*; and by how much they are nigher to the *Sea*, by so much they are the more *salt*, as on the Coast of *Africa*, especially on the Coasts of *Choromandel* in *India*, where no Vines do grow, and where that all Wells are *salt*. In the City of *Suez* at the Termination of the *Red Sea*, all Wells are *salt*, or brackish, and the *water* two miles distant is somewhat *salt*. So in many *Ilands* in the *Sea*, no Wells of fresh *water* are found, (though not so *salt* as the *Sea water* itself) as in the *Ile* of *St. Vincent* and others. In *Peru* in the low Region, the *Lakes* are *salt* by reason of the vicinity of the *Sea*. Yea in the Oriental Maritimate places, the *Nuts* called *Coco Nuts* are found somewhat *salt*. Also in the *Mediterranean* places themselves, *Fountains* of *salt water* are found, as in *Lorrain*, *Lunenburgh*, and the like.

3. Because that it is manifest, that the *Sea* emitteth its water through subterraneous passages, from the salt *Fountains* of *Lunenburgh*, where beneath the *Earth* those *Aqueducts* full of salt or *Sea-water* are found.

4. Because that digging to a great depth, as also in *Mines*, much *water* is found, of which neither the *Rain*, nor the *Air* can be made the efficient cause.

How

How *water* cometh from the *Sea* to the places of *Fountains*, so as to become sweet, we have now shewed, viz. the bottom of the *Sea* is not every where *Rocky* or *Stony*, but in many places *Sandy*, *Muddy*, *Gravelly*, *Spungy*, drinking the *water* of the *Sea*, and by a continuation of the *Earth*, brings it by degrees to a long distance from the *Sea*, where at length the *Guttule* unite; especially in a narrow space, such as are *Mountains*, and make a *Fountain* in the given place, or Cavity: but if so be that Cavity be hidden from the *Earth*, then the *water* so collected either followeth another way, wheresoever it be made, and so a *Fountain* seemeth to break forth in another place, which yet is not in that place; but is a *River* derived from the former place by a *subterraneous passage*. Or if that the *water* of that Cavity findeth no way about it self, neither by violence can break through the *Earth* that covereth it, then that *water* is not augmented; but what *water* flowed unto it to have been its encrease, that is averted to another place. For that is the property of all humid bodies, that all their parts and particles are moved towards that place where the deflux is made. So if you fill a *Vessel* with *water*, that the swelling or tumour may be above the brim of the *Vessel*, then all the parts of the extant *water* have an equal inclination, and power of deflux in the vicine part of the brim. But yet by reason of the mutual coherence of the particles (whose cause is declared in *Natural Philosophy*) if that the deflux be made in one part of the brim, all the other parts leave the vicine brim, and draw to that part of the brim, or they follow where the deflux is made. So if you immerge a long crust of Bread into *water*, you shall see the *water* born upwards, and the part of the Bread that is not immersed, to be humid. Moreover the *Sea* goeth under the *Earth* through *Caverns*, from which, after the same mode the *water* may glide or creep forth, unless you had rather ascribe it to evaporations, which are carried upwards, and uniting the drops in a narrow place.

But because there are many things, which may seem to render this opinion less probable, these ought also to be considered, that it may be evident, that they weaken not this assertion laid down.

1. The places of *Fountains* are more elevated than the *Superficies* of the *Sea*, by reason that most of them are in Mountainous places, therefore *water* cannot flow from the *Sea* to those places, because the nature of *water* is to move to places more depressed, or less elevated, as it is manifest from *Rivers*, and the *Artifices* of *Drainers*.

2. Although the bottom of the *Sea* be *gravelly*, *muddy*, and *sandy*, so that the *water* may penetrate it self through its *particles*; yet the reason doth not appear evident enough, but that it may more moisten the adjoining *Earth*, and that which is not so high, than to glide upwards to the places of *Fountains*, seeing especially that the *Earth* is *Rocky* and *Stony*, as in the *Mountains* of the *Island* of *St. Helena*.

3. There is no reason, why the *water*, so gliding from the *Sea*, should not break forth in a middle way between the *Sea* and the *Fountain*.

4. In the most profound *Mines*, none, or very little *water* is found, as *Thurnbeuserus* witnesseth.

5. This *water* of the *Fountains* should be *salt*, because that it doth proceed from the *Sea*. These are the chief Arguments which may seem to weaken the opinion proposed. For I pass by those slight ones alledged by others, viz. that they suppose that the *Sea* is not sufficient to supply so many *Rivers*; then again that *Rivers* then should never be diminished, if that were the true cause of *Rivers* that we have laid down. But unto these two, the answer is easy, because that the *Sea* again receiveth the *water* again from the *Rivers*, that it sent forth into the *Fountains*. Then as for the other we have shewed before, that the question is not, neither do we determine, that all the *water* of the *Rivers* is from the *Sea*; but only concerning the *water* of *Springs*, which is not the alone cause of *Rivers*, as we have said already: and we also assert, that the *water* of *Fountains* is augmented from *rains*, and *Dew*; because that these, moistening the *Earth*, glide, or are drawn towards the places of *Fountains*.

The Sea goeth under the Earth through Caverns.

Things to be noted.

Other Arguments Answered.

Fountains the nearer the Sea, are saller than those farther distant.

Four Other Arguments of great concernment.

See Oltavius his Voyage into Persia.

See Chap. 13.

tains, where the *efflux* of the *water* is made, which we have explained by other Examples. We come now to those four Arguments alledged, which may seem to carry some weight with them.

The first is esteemed very valid, as being taken from multiplicit experience: therefore many solutions are brought, and alledged by Learned men. First, they the most easily discharge themselves, who defend the *Ocean* to be more high than the *Earth*, for so they deny the assertion, and they say that this *Altitude* of the *Ocean* is the cause of *Springs*, because that *springs* are less high than the *water* in the middle of the *Ocean*. Moreover *Olearius* in the Description of his Voyage into *Persia*, relateth that he ascended the *Mountain* that adjoyneth to the *Caspian Sea*, and with an *Astrolabe* (or rather a *Geodetical Instrument*) to observe the Elevation of this *Mountain* above the *superficies* of that *Sea*, but found none, but that the extrem *superficies* of that *Sea* was seen in the *Horizontal Line*, yea somewhat elevated above it, so that the Tumour of this *Sea* was found a little more high than the *vertex* of the *Mountain*, on which he made his observation. But in truth this solution cannot be admitted of, because we have shewed in the Thirteenth Chapter, that the *water* of the *Ocean* is not higher than the *Mountains* and *shoars* of the *Earth*: and the frequent observations of *Mathematicians*, made on *Towers*, or *shoars* testify it. And as for the observation of *Olearius*, that seemeth to cause no small difficulty here, for that the *Caspian Sea* is no higher than the vicine *Lands*, much less than the *Mountains*, is collected from hence, *viz.* that many *Rivers* do exonerate themselves into the *Sea*, therefore we must say, that refraction obstructed the observation of *Olearius*, and caused the *water* of the *Sea* to appear higher than in truth it was: and peradventure the *waves* of the *Sea* increased the cause, and the *Mountain* that he ascended was none of the highest.

Some discovering the weakness of this Argument, bring this; that the natural place of water is above the *Earth*, and therefore that it must cover the whole *Earth*, because that it is higher than the *Earth*. Now by reason that it is impeded from its natural place by the *Mountains* above the *Earth*, arising towards the *Mediterranean places*, therefore that part of the *Ocean* which ought to be where the *Mountains* and Elevated parts of the *Earth* are, seeing that it is not in its natural place, doth press down the subjected *water*, which indeed is in its natural place, but yet is driven or pressed to the bottom, by the *Superiour water*, which is not in its natural place, where when it findeth no way, neither can give place, it retireth towards the sides, and passeth under the *Roots* of the *Mountains*, where being collected as in a *Cistern*, it is squeezed out by the *water* of the *Ocean*, preiling towards the *vertex* of the *Mountain*. No other than in a *Vessel* which hath on the side a *Funnel* touching the very bottom of the *Vessel*, from whence we infuse *water* or other *liquor* into *Glasses*; If, I say, we drop in a stone into such a *Vessel* full, or half full of *liquor*, the *liquor* lieth out through the Orifice of the *Funnel*. This is the subtilty of *Scaliger*; but in truth it is very thick. For *water* is not expelled so from the bottom of *Mountainous* places towards the *vortex*, because that experience testifieth the contrary in *Trenches*; and if that were so, all *Spring waters* should be *salt*: moreover it is false that he assumeth, that part of the *water* is not in its natural place, and therefore presseth down the subjected part. for this is taken up *gratis*, and contrary to experience; because that the *water* presseth not down the subjected part, except when it is higher than the vicine *water*, and therefore where the *Superficies* of the *Ocean* is *Spherical*, it resteth: but if that any *motion* were made from the pressure, this would drive the *water* of the *Sea* to the *Coast*, where the place is more broad, not through the small *Caverns* of the *Earth*. Now it is certain that *water* floweth in from the bottom of the *Sea* through the great *Caverns*, but they make not the *Fountain* fresh, because they take not away the saltness of the *water*.

I think not the solution of the Argument to be difficult, if that we consider how *water* cometh to the *Fountain*, *viz.* not from any *Channel* from the bottom of the *Sea*, or foot of the *Mountain* (for so it would retain its saltness) but by or through a continual progression of the watery particles; or a creeping in the *Terrestrial matter*, to the places adjacent to the *Fountain*, where at length it is gathered into drops by reason of the cavity, and continual succession of the *water*, and so causeth a *Spring*: For this we find in the *Earth* dug to a great depth, that here and there drops of *water* do consist, and are forced by those that are nigh, so that a little *Rivulet* is made, which are termed *Veins* of *water*. Many such *Rivulets*, if collected into one Cavity, make a *Fountain*; as those persons well known that are skilled in making of *Fountains*, or *Aquiducts*, or *Wells*. For in *Wells* *water* is collected from many drops, which meet together in the bottom of the well, from the adjacent *Earth*. And those that make *Aquiducts*, bring the *water* by gutters and trenches into one place, so that the drops may fall from the higher places into the Cavity.

But if that you object that many *Fountains* bubble up in the midst of stones, by reason of which it is not probable that the watery particles should so creep forwards; to that I Answer, that this confirmeth our Opinion: For those stones do not go through from the top to the foot of the *Mountain* (at least in those *Mountains*, where the *Fountains* are found) but only occupy the *Superficies* of the *Mountain*, and a certain small profundity within the *Earth* of the *Mountain* is more soft, or less stony, or at least such as may receive and attract *water*. Therefore when by penetration it is come to the stony part, because that it can penetrate no farther, there it standeth, and is collected into drops, and maketh a springing *Fountain* between the stony parts; to wit, if that a passage be granted; and that the *Mountains* and *Rocks* of the Isle of *St. Helena*, and almost of all *Islands* are not within so rocky and hard, is collected from hence, that almost all those *Mountains* have sometimes burned, or at the least smoked, which is discovered from the *Ashes* on the *Earth*, and also the *Brimstone*, or *Sulphur* found in those places: add moreover what we observed before, that the spring of the *water* is not always there where it seemeth to be, but floweth from some higher place through a subterraneous passage to the *Fountain*, and so causeth the *water* to leap up with some force, which I suppose to be done in many *Fountains*, and the more, if we consider, that *fire* is moved also downwards, by reason of the continuation of the matter, when in truth, if that the same be free, it tendeth upwards. So if you put the end of a long piece of *Iron* in the *fire*, this will penetrate through the whole *Iron*, untill it come to the other extrem, although this other extremity doth not tend upwards but downwards.

So much for the first Argument; unto the second I answer, that a reason may be given, why the *Sea* *water* should not penetrate so much into the *Earth* towards the *Center*, as towards the *Mountains*, *viz.* because the *Earth* is there more full of *Metals*, and hard, as experience testifieth: but where it is not so hard, there the *water* penetrateth; and therefore we decay not but that *Rivers*, or at least sweet or salt *Lakes* may be found beneath the bottom of the *Sea*, within the *Earth*, towards the *Center*, where any such Cavity is. But because that there are few such Cavities, and that every where the *Earth* is *Metallous*, and hard beneath the bottom of the *Sea*, therefore it cannot continually imbibe *water*, but when it is full it ceaseth to imbibe any more; neither doth it receive more. Therefore then the *water* glideth towards higher places, unto the motion of which, it is probable that the mutation of the height of the *Sea* availeth much; sometimes in this, and sometimes in that part, by reason of the *floods*, *waves*, or *tempests*. For the *water* being made higher, more presseth the *water*, and promoteth its ingress through the *Earth* to the *Springs*. And seeing that every day the *Altitude* of the *Sea* is augmented, and diminished in the parts of the *Ocean*, not only by storms, but also by the flux, and reflux; therefore such a pressure hap-

Veins of water in the bowels of the earth.

The second Argument answered.

The third Argument answered.

The fourth Argument answered.

happeneth every day : but I question whether this cause can effect much.

Unto the third Argument, I say that the reason is the disposition of the places, and of the Earth it self; and as I said, that the humour is moved, and glideth towards that part, where the *flux* is made : neither do I think it needeth any farther explication.

The fourth Argument taken from the saltiness, hath a more difficult solution : because that it seemeth not possible, that the saltiness should be taken away only by transcolation; for the saltiness of the water consisteth in a double *Salt* (which the *Aristotelians* never observed) the one of which, the *Chymists* aptly call fixed, the other volatile *Salt*. And the fixed *Salt* may indeed be separated from the marine water, as well by continual transcolation, as by *coction*, and *distillation* of the water : but the volatile *Salt* because it is *spirituous* is immediately advanced with the water, neither can it be separated by frequent and often repeated *distillation*: Therefore it is hard to give a mode, by which this volatile salt *spirit* in its passage between the *Sea* and the Fountain, may be separated from the *Sea* water. Yet in the mean while these will suffice for the solution. 1. Although we have not discovered the mode, and artifice, by which this volatile saltitude may be separated from the *Sea* water, yet we must not deny, but that it may be separated : for by nature we find it separated; *viz.* for fresh showers fall into the *Ocean*, which yet were generated of the vapours taken up from the *Sea*. 2. Those particles of *Salt* water penetrating the Earth before they flow to their Fountain, are mixed here and there with other waters proceeding there from rain, or vapours, and so that small saltitude, that they yet had, is rendered altogether insensible. 3. It is not true that the saltitude is altogether insensible in all Springs, because that some Fountains are salt, as we said before; other some brackish a little, as those, two miles from the City *Suez*, and in places less remote from the *Sea*. Therefore there is need of a long transcolation, and gentle evaporation, to separate the water from the volatile *Salt*, and by this artifice we make *Sea* water less salt, and such also is the generation of rain water, which therefore is not salt, or at least less salt. For it is certain that sometimes saltish kinds of rain do fall into the *Sea*.

Therefore the waters of Fountains proceed partly from the *Sea* or subterranean waters, partly from Rivers, and Dew, that moisten the Earth. But the water of Rivers partly proceedeth from Springs, and partly from Rain and Snow.

Proposition VI.

Certain Rivers hide themselves in the midst of their passage under the Earth, and in another place rise up again as if they were new Rivers.

The most celebrated of them are, 1. The River *Niger*, which meeting the Mountains of *Nubia*, is observed under them, and cometh forth again from the other Occidental quarter.

2. *Tigris* having passed the Lake *Arcthusa*, meeting the Mountain *Taurus*, is hidden in a Cave, and floweth out on the other side. Then when it hath passed the Lake *Thospites*, it is again obscured in subterranean Caverns, and then after it hath thus run the space of about six German miles, it breaketh forth again.

3. About

Of Rivers which in the midst of their passage hide themselves under the Earth, and rise again.

3. About *Arcadia* in *Peloponnesus* many such Rivers are to be found, as *Aristotle* writeth in his first Book of *Meteors*, Chapter Eleventh.

4. *Alpheus*, a River of *Achaia*, is absorbed by the Earth. The *Grecians* write, that it keepeth its course under the *Sea*, and beneath the Earth, even unto *Sicilia*, where they will have it to emerge on the Coast of *Syracuse*, and to be that River that is called *Arcthusa* in *Sicilia*. Now this they especially collected from this, *viz.* that *Arcthusa* in *Sicilia* every fifth Summer cast up the dung of those Beasts at that time, when the *Olympian Games* were celebrated, and the dung and garbage of the slain Victims were cast into *Alpheus*. Therefore being carried with a direct Current, they were cast up in *Sicilia*.

5. The River *Guadiana*, between *Portugal* and *Biscay*, in times past called *Avas*, wholly obscureth it self at *Medelina*; and about 8 German miles further discovereth it self again.

6. *Dan* (which flowing with the River *Jor*, maketh *Jordan*) breaketh forth some miles from its Fountain *Phiala*. *Syrax* or *ryphes* being cast into the same, are found and discovered in the Fountain or prorrupcion of the River *Dan*.

The Reasons why these Rivers hide themselves under the Earth, and again emerge, are, 1. The obstacle of a more elevated place, than the Channel of the River. 2. Either perchance some cavity existing in the Earth, or some inconstant matter, which easily giveth place to the gliding River.

There are also other Rivers, which hide themselves under the Earth; but do not again emerge, as we shall shew in the following Propositions.

Proposition VII.

Most of the great and indifferent Rivers, as also a great part of the lesser, do exonerate themselves into the Sea, or a Lake; and the place where this exoneration is made, is termed the Mouth of the River. Some Rivers have one, some three, and some more such Mouths. Some of the Rivers of indifferent magnitude, as also the lesser sort, discharge themselves into greater Rivers: the others either stagnate, or are sucked up by the Earth.

Concerning the greater Rivers, the thing is evident by the Example of the *Rhine*, the *Danube*, the *Volga*, and such like: For the *Danube* is exonerated into the *Euxine Sea* by seven Mouths; the *Volga* hath at least seventy Outlets or Mouths; the *Nile* hath seven, and where it overfloweth, more.

The cause why greater Rivers do exonerate themselves into the *Sea*, is their abundance of water and vehement course. Now why they have more outlets than one, there is a twofold reason for the same; 1. The abundance of water. 2. The generation of Sands and ridges in the mouths, which in progress of time was so augmented, that they become either part of the Land or Island, and so cause, that the River gliding is divided into two branches. And when many such ridges are generated, the River is divided into many branches, or one mouth into many; but then for the most part the mouths are carried forwards, and the *Sea* recedeth from the Land.

The *Ancients* tell us, that the *Nile* in times past let it self into the *Sea* by one mouth, which was termed *Canobus*. Unto these two former causes a third may be added, *viz.* Human Industry; for men oftentimes from some River derive courses of water, and prepare a passage or Channel for them into the *Sea*, partly to water their Fields, and partly for the convenience of Navigation; which *Aqueduct* in progress of time, by the violence of the water, becomes greater. Therefore the *Ancients* write, and that not without

Most Rivers, both great and small, lose themselves in the Sea, or in Lakes.

Courses of water, often made by the Industry of Men.

R out

out probability, that all the mouths of the Nile, except Canopus, were made by men. But of this we shall treat more fully in the following Proposition; where also shall be declared, how it cometh to pass, that one River floweth into the Channel of another.

Wolchda in *Moscovia* (not *Volga*;) ariseth from a Lake, and exonerateth it self into another Lake.

Rivers, and *Riverets*, which neither exonerate themselves into the Sea, or into other *Rivers*, are either *Arms* or *Branches* of other *Rivers*, or else peculiar *Rivers*. Those which are *branches* of other *Rivers* very probably do stagnate, and go not under the Earth. Now the cause why they tend not towards the Sea is twofold; 1. Because the Channel is not so deep, and therefore they have not much water. 2. The more hard Earth hindereth the progress. 3. Many of them are made to water the *Fields*; and for the more easie use of water. 4. The Mouth is obstructed, the Sea departing, and the Land augmenting or promoting towards the Sea, or the banks or ridges generated in the Channel, are so augmented, that they admit of no water, but repel it; so that branch of the *Rhine*, which formerly discharged it self into the *Belgick* Ocean near the Village of the *Gatti*, now stagnates in the mid-way, between *Leyden* and that Village.

But those peculiar *Rivers*, which neither exonerate themselves into the Sea, nor into other *Rivers*; but rising in the Earth, seem to be absorbed by the Earth; these *Rivers* are very small, also few; as also those that flow from the Mountainous places of *Peru*, *India*, and *Africa*; are swallowed up either within the *Sandy soil*, or are absconded in the Earth. So at *Metem*, a Village in *Arabia*, near the Gulph, is found a River with a glorious Channel. Under these *Reeds*, in the Summer season, the streams hide themselves with such a silent course, that there appeareth nothing of humidity on the top; but if that no way be admitted to these *Riverets* under the Earth, they make *Marishes* and small *Lakes*. Notwithstanding some run with so flow a stream; that almost so much is separated by exhalations, as they receive by the Stream, and so are stayed on the Earth, and neither make *Lakes*, nor are absorbed; as the *Riverets* *Conitra*, *Salle*, *Marefsa*, *Jeleeja*, and others in *Moscovia*.

Proposition VIII.

Whether the passage or Channel, through which the Rivers run, be made by the Industry of men, or by Nature?

Of the Channels of Rivers.

It is probable, that the Channels of those *Rivers* which were not generated with the Earth, were made by hands, on those very accounts: 1. Because that Experience testifieth, that when new *Fountains* do flow, the water so flowing out maketh not a certain Channel to it self, but doth dilate it self through the adjacent Land. And therefore, if that it must flow, there is need of the help of man to hollow a Channel. 2. It is manifest, that men have made many Channels: So the *Chinefes* made a Channel, by which water runeth from the yellow River into another River. 3. Because *Lakes* and *Marishes* do confirm the same; such as are found about the *Fountains* of many *Rivers* that are on a plain; such as are those *Lakes* or *Marishes*, from which the Nile, *Tanais*, *Volga*, and others do flow. Which *Lakes* we doubt not, but to be generated and conserved from the effusion of water, made round about by the *Fountain*; and therefore men made a certain Channel to defend their *Fields* from such a water, into which Channel the water might fall and drain the Lands. The same must be understood of *Rivers*, whose *Springs* are on the Mountains.

Of affinity to this Proposition is this other, viz. Whether that *Rivers*, which exonerate themselves into others, or meet together, made that passage by their motion; or whether they were brought into them by men which made a Channel? The latter seemeth more probable, for the reasons before alledged.

alledged. The same must be observed concerning the branches of Rivers and Circumductions, by which Islands are made in the *Tanais*, *Volga*, &c. So one Arm of the *Euphrates* formerly passing through the *Chaldean* Marishes, was let out into the Sea; afterwards it left its course, many *Aqueducts* and *Channels* being made by the *Natives* to water their grounds; neither doth it arrive to the Sea, its mouth being obstructed, and its water is partly taken up in the *Aqueducts* that are made, and partly averted into the other Arm, which exonerateth it self into the *Tigris*. And so it seemeth to be the case of other *Rivers*, which we now see do not go forwards into the Sea, but to stagnate. It is probable, that in times past they did exonerate themselves into the Sea.

Of Isles made in Rivers.

Proposition IX.

Why no salt Rivers are found, seeing that Salt-springs are found in many places.

The reason is, because that men have no need of Salt-water, and therefore make no Channel, by which the water of the salt Fountain may flow; by reason that they can have Salt at an easier rate: But if that a fit Channel were prepared from those salt Springs, we should have salt Rivers; such as are in *Lunenburgh* and other places, under the Earth. Neither do we question, but that many Rivers of Salt-water do flow from their Fountains under the Earth.

The reason, why no Salt Rivers are found.

Proposition X.

The Channels of Rivers, by how much they are the more near their Fountains, by so much they are the more high; and by how much they are the more near the Mouths of Rivers, and the Sea, by so much (for the most part) they are the more depressed.

But in some Channels some parts more removed from the Spring, are higher than that part more near to the Fountain; either by reason of the Hills and Valleys, as I may so say, in their Channels, or by reason of their Whirlpools: yet no part of the Channel is higher than the Fountain.

Furthermore, of Channels of Rivers.

The cause or reason of the Proposition is manifest, because that water floweth not but from a place more high to a place more low, and so every part of the Channel (especially the mouth of the River) is lower than the Spring: for otherwise it would flow back again to the Fountain. Now that the elevation of the Channel doth decrease even to the mouth of the River, that at least is true concerning many parts of the Channel; for because here and there are found Whirlpools in a River, places more depressed; and on the contrary, ridges and little hills; thence it cometh to pass, that one part of the Channel, although more removed from the Springs, is higher than the other part of the Channel which is more nigh the Fountain; and yet notwithstanding the water floweth from this to that, because that quantity of water floweth into the places depressed, that the superficies of it becometh higher than the little hillocks or ridges, or the vicine patts, which being more elevated, lie towards the mouth. And there is scarce any River to be found, whose Channel hath not these inequalities; especially in the Nile and *Volga* these ridges do abound.

The flowing of water.

And where the water falleth from a higher place to a more depressed part of the Channel; if the depression be great, the place is termed the Cataract of the River, where the River runeth downwards with a great violence. Such Cataracts great Rivers have, especially the Nile.

A Cataract, of what.

For the Nile in two places of his Channel, falleth down between the Mountains with that noise and rapidness, that the Inhabitants are reported to be deafened by the same, *Wolga* also, a small River in *Moscovia* (not *Volga*) hath two *Cataracts* near *Ladoga*.

So the *Zaire*, a River in *Congo*, six miles from the shoar, hath a *Cataract*, where it falleth from a Mountain: also the *Rhine* at *Beleflida* and *Scassusia*, falleth with a great noise. But *Drainers* have observed, that if the bottom of the Channel be depressed one pass in 200 paces, it will hardly be navigable by reason of its celerity. Seeing therefore that all great Rivers are Navigable, we infer, That the depression of the Channel is no greater than one pass or mile in 200: but particular *Cataracts* and *Whirlpools* are excepted. Now this depression of one part of the Channel beneath the other part is termed *Libramentum*; and the depression of the mouths of the River beneath the place of the Fountain is termed, the *Libramentum* of the River.

Proposition XI.

Why Rivers have, or acquire a greater Latitude in one part of them, than in the other.

The causes are fourfold; 1. If that the bank or shoar be more low in this part, than in that. 2. If that the Earth of the shoar be less hard and coherent, as not being sufficient to resist the violent access of the River, which sometimes proceedeth from the winds, or plenty of water. 3. If that the Channel on that part be less profound, or hallowed, or have ridges: And 4. If that it flow from any *Cataract* into that part.

Proposition XII.

The Channels of Rivers become more or less depressed, sometimes in this, and sometimes in that part.

They become less depressed, or elevated, and not so hollow; 1. If that *Ridges* be generated. 2. If that the River become more broad on that part. 3. If that the flux become less swift.

The depression or cavity of the Channel is augmented, if that the flux of the River be more vehement and swift, especially from some *Cataract*, or between the narrownesses of the shoars; more especially, if that the whole bottom consist of earth less coherent.

Proposition XIII.

Why some Rivers run with a more swift current, and others with a more slow. And why one and the same River is carried with a swift current in one place, and with a slow in another, which is observed of the Rhine in many places.

The causes are, 1. The Altitude of the Spring. 2. The depression in the parts of the Channel, or bottom (especially in the mouth,) for if that the bottom be depressed one mile in two hundred; *Drainers* have observed, that the water is so swiftly moved, that there is great danger in sailing: For where there are *Cataracts*, there the Rivers rush with a mighty violence; and therefore *Torrents* are carried so furiously, because that they flow from Mountains. 3. The straightness of the Channel, and profundity joyned with an abundant quantity of water; as when Rivers pass between two Mountains or procurent Lands.

Rivers

Of the Latitude of Rivers.

Of the motion of Rivers.

Rivers famous for their swift course, are the *Tigris*, *Indus*, *Danube*, *Irta*, *Malmistra*, that floweth with so great a noise, that it may be heard a great distance off.

Proposition XIV.

The mouths of Rivers may be by so much the more easily obstructed, by how much they are the more broad, and by how much they are the deeper, or less depressed, and by how much there is less quantity of water, and the flux is less swift and vehement. For these causes make the River to be carried with a lesser violence, neither doth it thrust forth the Terrestrial matter, which is collected in its mouths, but rather suffereth it to sink.

Proposition XV.

Very few Rivers are carried in a direct course from the Spring to the Outlet, many seek divers quarters in their flux, and some flow with many windings.

The cause seemeth partly to be the industry of men, partly the motion of the water, partly the interposition of a ridge or bank in its direct course.

Winding Rivers are, 1. *Rio de Orellana* in *Brazilia*, making innumerable windings, so that its Passage or Channel is reckoned to be above 1500 miles, when in a direct line from the Spring of it to the mouth are only 700 miles.

2. The River *De Madres* in *Anatolia*, which hath 600 windings.

3. The River *Toera* arising in *Siberica*, floweth with so many curvatures, or windings; and the *Russians* and *Siberians*, when they sail in it, carry the Boat or small Vessel and its lading by land from one winding to another, to avoid greater expence.

The course of Rivers from the Spring.

Proposition XVI.

Whether the Lakes, through which some Rivers do seem to pass, (or to enter into, and to go out from) be caused by Rivers? or whether they have their peculiar Springs, and augment the water of Rivers? also whether that a River flowing from a Lake be the same with that which floweth in?

All Rivers have not such Lakes, but some only. *Nubia*, a River of *Africa*, hath five; the River *Niger* four; *Rhodanus*, the Lake *Lemanus*, &c.

Concerning those Lakes we have spoken in the preceding Chapter, viz. that a River going forth must be compared with that which entereth in: if that which goeth forth be greater than that which entereth in, there will be peculiar Springs in the bottom of the Lake, which causeth that River: but if that a lesser, or at least no greater, goeth forth, this Lake is made and conserved by the River entering in, and the cause or original of its generation was the latitude and cavity, or depression of the Channel; and a Lake may be made from any River, as we have said in the preceding Chapter.

Although the River going forth be situated almost in a direct line with the River entering in, yet those two Rivers shall be accounted one River, or the parts of one River, viz. when that which goeth forth is greater than that which entereth in: for if it be lesser, or no greater, I think we ought not to question, whether that which goeth forth be the same with that which cometh in.

Of the cause of Lakes.

Other

Other Notes or Signs are in some, as the *Rhodanus* entereth the Lake *Le-manus*, and again goeth forth; and yet causeth not that Lake; which is discovered, besides other tokens, from the colour, which this River beareth contrary to the Lake; neither doth the *Rhine* cause any Lake, but is produced and conferred from waters bubling under the earth; yet I do not propose these as undoubted.

Proposition XVII.

Most Rivers are by so much the broader, by how much they are near to their mouth, or removed from their Spring, and great is their Latitude in their Mouths or Outlets.

The cause is, 1. Because other Rivers enter into that which exonerateth it self into the Sea, and so the quantity of water is augmented. 2. Because the Channel is less depressed in the parts nearer the mouth. 3. Because that the water is forced back by the wind blowing from the Sea from the mouth to the Fountain, which violence is only discovered in the parts near to the mouth, not in those remote and near the Fountain. 4. The Sea it self, when such a wind bloweth, entereth the mouth, and rendereth it more large and broad by vehement agitation.

And by so much the outlets are larger and broader in great Rivers, by how much they are the fewer. Great are the mouths or outlets of the River *Maragnon* in *Brazilia*; of *St. Laurence* in *Canada*; of the *Zaire* in *Africa*; of *Rio de la Plate* in *Brazilia*: for this River is carried into the Sea by an outlet of 40 miles, as some have observed; or as others, of 20 miles only. And I suppose those that write of 40 miles, comprehend the other mouths of the River together. Those who have been in *Congo*, relate that the mouth of the *Zaire* is 28 miles: and these Rivers sending forth such a large quantity of water, overcome and obscure both the salt taste of the water, and the motion of the Sea towards the shoar, and that unto 10 or 12 miles in the Sea.

Proposition XVIII.

The water of Rivers carrieth with it many particles of various Metals, Minerals, Sands, of oily or fat Bodies.

Some Rivers carry gold, that is sands mixed with some grains of gold, and such are 1. some in *Japan*; 2. In the Islands of *Lequeo* not far from *Japan*; 3. A Riveret called *Arroe* in *Africa*, which springeth in *Monomotapa* from the foot of the Mountains of the Moon, in which Mountains there are golden Mines; and it floweth into *Magnice*, a River in *Soffale*. 4. In *Guiney*, where the Negroes separate these grains from the sand, and sell it, or exchange it with the Europeans for Toys or slight Commodities. 5. In the Riverets about *Mexico*, grains of gold are also gathered up, especially after showers of Rain. Which must be understood of all these Riverets: For except in the times of showers, scarcely any, or very little, is found. 6. In *Peru*. 7. In *Sumatra*. 8. In *Cuba*. 9. In *Hispaniola* and other adjacent Isles. 10. In *Guiana* a Province in *America*. 11. In the Rivers of *Caribana* great grains are found after showers. 12. Many Riverets and Springs are found in the Regions about the Alps in *Germany*, especially in the Province of *Tirol*, from the water of which gold and silver is extracted, although nothing of grains be conspicuous in them, because they carry very small Particles or Atomes. The *Rhine* also carrieth golden clay in many places, as also the *Abbis*. In times past the River *Tagus* was famous for rowling down Sand-gold; but at this day no such are found in it: neither do I remember that any River in Europe is celebrated for such riches. Also in *Hassia* at this time a small River is reported to be found, in the sands of which were grains of gold; but I have read no Author worthy of credit concerning it.

No

The Mouths of Rivers, broader than at their Springs.

Rivers in their course carry various things with them.

No Silver Rivers or Riverets are taken notice of by Writers, yet I doubt not, but that there as many, or more Riverets, which carry grains of gold; but because they are not so easily discovered from the sand, and no great gain can be obtained, therefore it hath not yet been observed by any. The same is also the cause why we meet with no mention of those Riverets that carry grains of Iron, Copper, Tin, except of very few, of which questionless there are a great number, the admirable effects of which being discovered, men admire and are amazed, and vulgar Philosophers fly to an occult quality. Let us only cast an eye on that River in upper Germany, which changeth Iron into Copper, as the Vulgar think; so that if you hang an Iron shoe in it, you will draw it out Copper. But the Iron is not changed into Copper, as is vulgarly supposed, but the grains and particles of Copper and Vitriol that are in this River, corrode the Iron by the assistance of the motion of the water, and the particles of the Iron being removed, those of the Copper succeed in their places. This the Modern Physicians, that are skilful in Chymistry, have learned by another experiment.

Much less are the Riverets that are impregnated with many particles of kinds of earth and salts observed: But we shall explain in the following Chapter the Mineral and Metallick Springs.

From this admixture of various particles proceedeth the great diversity of waters in Rivers and Wells. The water of some, if that you use it to boyl Meat, maketh it black, (which is a sign that it is impregnated with Iron;) neither are Pease so easily softned, as when they are boyled in other Water which is somewhat more fat. Of divers waters the same or like Beer cannot be made. Now the *Albis* is of the number of these fat ones, as I may so say. The cause of this variety is to be sought from the variety of the Lands; through which the River runeth, which are either stony, gravelly, or metallick. And experience testifieth, that Rivers, whose water is fat, do run through clayie Lands, so all the places that adjoyn to the *Albis* are fruitful.

Proposition XIX.

The waters of most Rivers differ in colour, gravity, and other qualities.

For some waters are black, some inclining to black, some inclining to red, some to white.

And this diversity of them is chiefly noted, when that two Rivers do meet; for we may discover for many miles those waters where now they exist in the same part of the Channel: From whence also 'tis manifest, that they differ in gravity, when that one rather sinketh to the bottom of the Channel, than the other; although this is made more manifest by the examination by weight.

The water of the *Ganges* is accounted the most wholesome, and the most light; and the great *Mogul*, in whatsoever place he is, causeth this water to be brought him, of which he only drinketh. Some will have the water of the *Nile* to be the most fruitful, and the most wholesome. Most heavy waters are impregnated with Iron or Mercury.

In great Rivers we must have respect to the Riverets, of which they are compounded: For the *Rhine* receiveth many Mineral Riverets; so also doth the *Danube* of Gold, Iron, and Vitriol: and hence have they their quality, although many Fountains have little of them.

Proposition

A strange River in Germany.

The waters of most Rivers are of different qualities

Proposition XX.

Some Rivers every year at a set time are so augmented, that they overflow their Channel, and inundate the adjacent Lands.

Of the increase and overflowing of Rivers.

River Nile.

The most famous of those is the *Nile*, that so encreaseth, that it overspreadeth all *Egypt*, except the *Hills*. In *Congo*, *Angola*, *Monomotapa*, *Soffala*, *Mozambique*, from thence it is known that the *Fountains* of the *Nile* are the great Lake *Zaire*, (or in the Lake *Zaire*) which is situate in the procurent of *Africa*, in a middle place between the Eastern and Western shoar, under the tenth degree from the *Equator* towards the South, as we have said in the former Chapter.

Near unto this Lake are many ridges of *Mountains*, which are called the *Mountains of the Moon*; so that the Lake lieth, as in a Valley, between *Mountains*. Now because that these places lye from the *Equator* towards the South, therefore the reason of the Solary motion requireth that they should have *Winter* when that we have *Summer*: but by reason of their small distance from the *Equator*, they feel no cold; but instead of *Snow* they have almost continual *Rains* two hours before and after Noon in the Kingdom of *Congo*; the *Clouds* hardly permitting the sight of the *Sun*: with the same *Clouds* the tops of the *Mountains* appear as covered; and in these Mountainous places rains and showers are almost continually, which run down like *Torrents*, and all flow together into the Lake *Zaire*, and from thence into the Channel of the *Nile*, *Zaire*, *Cuama*, and others that arise from the same Lake, but yet do not abound with so great a quantity (yet the *Zaire* doth overflow every year) as the *Nile*, because the Channel of them is more deep; and after a short Tract they exonerate themselves into the Sea: yet all of them encrease at the same time, and disgorge themselves of a great quantity of water into the Sea.

River Niger.

The second River among those that overflow the adjacent Lands at a certain time, is the *Niger*, of no less Tract than the *Nile*, though not so famous. It overfloweth at the same time that the *Nile* doth.

River Zaire.

The third River of the overflowing Rivers is the *Zaire*, a River in *Congo*, of which we have spoken. Add to this the lesser Rivers of *Congo*.

Rio de la Plate.

The fourth is *Rio de la Plate*, a River in *Brasil*, which overfloweth the adjacent Fields at the same time with the *Nile*, as *Maffiens* writeth.

Rivers Ganges and Indus.

The fifth of the overflowing Rivers is the *Ganges*.

The sixth is the River *Indus*: these two Rivers in the *Pluvial months* of those *Regions*, pour themselves forth upon the Lands without their Channels, where then the *Natives* do gather the water into standing Pools, that in the other months of the year, when there is almost no *Rain*, they may thence fetch water; and this inundation causeth great fertility in the Fields.

The seventh comprehendeth many, viz. four or five, which flow from the Lake *Chiamy* in a moderate Channel, and exonerate themselves into the Gulph of *Bengala*, passing through the Kingdoms of *Peru*, *Sian*, and others. That which passeth through the Country of *Sian* is called *Menan*. And at the time of the inundation, the Fields and Streets of the Cities are covered with water, so that they are forced to make use of Boats to sail from one house to another. And this inundation also causeth exceeding fertility.

River Macou.

The eighth is *Macou*, a River in *Camboja*, which overflows in the Summer months.

River Parana.

The ninth is the River *Parana*, which overfloweth after the same manner as the *Nile* doth.

The tenth in *Choromandel* a part of *India*, the Rivers overflow by reason of the plenty of waters that flow from the top of the Mountain *Gata* in the *Pluvial months*.

The

The Eleventh is the *Euphrates*, which at set-times of the year overfloweth *Mesopotamia*.

The Twelfth of these overflowing Rivers is *Sus*, a River in *Numidia*, which overfloweth in the Winter.

I have not read of any other Rivers, that I can remember, that do overflow in an Anniversary time of the year, although some may do it in most years; to wit, the River *Obius*, and *Flavius* a River of *China*.

There are many Rivers that overflow without any order, or in a set-time, yea there is scarcely any River of noted magnitude which overfloweth not its Banks sometimes: So it is evident concerning the *Albis*, the *Rhine*, and the like. And but that the capacity of the Channel, and the height of the Banks obstructed, all great Rivers (in an Anniversary time) would inundate, because that most of them are much augmented in the Spring season. And it may so happen, that a River that did use to overflow, may begin to do it in an Anniversary time, viz. if that any part of it, by reason of ridges or sands, or any other way, become higher, and the Coasts or shoars become more high: but then men are accustomed to raise Banks.

The only cause of these Inundations, is the abundance of Water, which in some Examples alledged, may proceed peradventure from dissolved Snow; but in most, from frequent Rains. Yet that is a wonder, that the *Indus* and *Ganges* should overflow in other Months, than the adjacent Rivers, from the Lake *Chiamy*; but the cause of this diversity, which is observed here in this Season, must partly be taken from the Anniversary rains in the adjacent places, partly from the Mountains and Rains about the places of the Fountains. But we, to avoid prolixity, shall supersede to discuss every Example. The River *Bibara* in *France*, near to *Paris*, sometimes without any Rains, or at least with those that are usual, so swelleth, that it causeth defolation unto the Suburbs of *St. Marcellus*. Now the reason why almost all these Inundations make the Lands fruitful, is, because that water that inundateth is either Rain or Snow-water; which waters, both by reason of their Spirituous levity, and also, because of their Sulphureous substance, which they have admixt in the Air. Above all other, Minerals are very prevalent to fructify, and are also wholsom. Now that there is such a Spirit and Sulphur in Rain-water, is proved.

1. From the Worms that are generated in it.
2. From its easie putrefaction.
3. From the very Chymical distillation.

Yet some Rivers by their Inundation, do not make the Earth fertile, but rather cause sterility; as *Ligeris* in *France*; when that *Sequana* maketh them fruitful by its fat water.

Proposition XXI.

To explain, how Springs or Fountains break forth.

In the fourth Proposition we have shewed, whence the water ariseth that floweth from Fountains. Now here we demand, by what force that water collected in the Earth is thrust forth, seeing that it seemeth not possible to be done without a violent removing of the Earth. But the causes are various, which make way for a Spring in any place. 1. If that in any place there be a certain cavity, the water distilleth into that without the help of any other cause; when that by creeping it cometh into it, and then in course of time, maketh greater passages for it self, until that cavity being filled, it floweth out and maketh a River. The same also happeneth without a cavity, if that the Spring be on the top of a Mountain. Also for this reason

Of the breaking forth of Springs and Fountains.

S

frequent

frequent Springs are found in Woods and shady places: For the Rain-water moistneth the Earth; and because it is not extracted by the heat of the Sun, and an open and free Air, by degrees it allureth to it self the hidden water of a future Fountain. 2. A way is prepared, and the Earth removed by the Spirits, which are admixed with the waters, yet in the Earth; also the rarefaction of water in the Earth, by which it requireth the larger place: For the Waters, whilst that yet they are hidden within the Earth, carry many Spirits. Also Subterranean fires add not a little to this. 3. Oftentimes Fountains are brought to light by Showers, for Showers do render the Pores of the Earth more ample and large, when that they conjoyn with the water of the hidden Fountain; and so this followeth that, by reason of the mutual conjunction and coherency. 4. Sometimes Springs are opened by an Earthquake: so an Earthquake sent forth the River Lodon. 5. Sometimes they are discovered by the Industry of Men, by digging the Earth. 6. Many Fountains have been discovered by Animals, which are wont to dig up the Earth with their Snouts: so a Hog first discovered the first Salt Spring in Lunenburg; for when he had rooted up the Earth and made a gutter, the water spouted out, which filling the gutter, the Hog (according to their custome) lay down in it; then when he arose, and that his back was dry, some discovered a very white colour on him, which when they had more accurately contemplated, they found it to be white Salt: then they went to the Springs, and from thence forwards many more were sought and found out; from which the City obtaineth almost all its riches and Splendor: And in Memorial thereof the Hog was quartered and smoak-dried, and is kept at this very day in the Palace of Lunenburg to be seen.

Proposition XXII.

A place being given in the Earth, to enquire, whether a Spring or Well may be made in it.

See Vitruvius, Lib. 8. Cap. 1. See Vitruvius in the Eighth Book of his Architecture, Chap. 1. At this day we perform the same by digging up the Earth oftentimes to a great depth; and for the most part veins or heads of Springs or Wells, or the Wells and Springs themselves are found.

Proposition XXIII.

A place being given, to make a Spring or Well in it, if that it be possible to be made.

We will alledge the words of Vitruvius, as being a man excellently skilled in these affairs, seeing that we never used our selves to this kind of Exercise. In his Seventh Chapter thus he speaketh, "Reason must not be contemned in digging of Wells, but the natural reasons of things are to be considered with sharpness of wit and great prudence, by reason that the Earth hath many and various things within it; for it is compounded, as other things, of four Principles, and the first is Terrene, and hath from the humidity of the water Fountains; also heats, whence proceed Sulphur, Alom, Bitumen, and gross Spirits of Air, which being thick, when by the fistulous intervenings of the Earth they come to the place where the Well is dug, and find men digging, by their natural vapour they stop up the Animal Spirits of those that work, at their Nostrils: so that those that fly not quickly away, are there choaked. Now to avoid this, we must thus act; Let a Candle be lighted and let down, and if that it continueth burning, you may descend without danger; but if that the light be extinguished by the force of the Vapors, then let Reservoirs be dug on the right and left hand, near the Well, so as by the Nostrils the Spirits will be dissipated. When those are so explained, and that you are come to the water, let the structure be so fenced, that the

"the veins be not stopped: But if that the places should prove hard, or that the veins shall not be altogether at the bottom, then assistance must be taken from the coverings of Plaster-works. Now this must be observed in Plaster-work, that the roughest and purest Sand be gotten, that the Cement be broken with a Flint, that the most vehement Chalk be mixed with the Mortar; so that five parts of Sand answer to two of Chalk or Lime: Let the Cement be added to the Mortar; of it, let the Walls in the deep pressed trench, unto the measure of the future altitude be spaged, the Bars being made of Iron. The Walls being plastered, let that which is Earthy in the midst, be evacuated to the lower measure or libration of the Walls; and the bottom being levelled, let the Pavement be plastered with the same Mortar, unto the thickness that is appointed. Now these places, if they shall be made double, or treble, that they may be transmuted by the percolations of the water, will make the use of it far more wholsom; for the Mud, when that it hath found a place to sink in, the water becometh more clear, and will keep its tast without any scent; if not, you must of necessity add Salt, and extenuate it.

Proposition XXIV.

To prove, whether the Water of a Spring be wholsom.

Concerning this, Vitruvius thus writeth; "Their probations must be thus looked after: If that they flow and be open before that they begin to be drawn, look on them and observe of what membrature they are; what Inhabitants dwell about those Fountains, whether they be of strong Bodies, of good colours, not lame, blear or fore-eyed; if so, the Waters are very excellent. Also, if that a new Spring be dug, and the water be put into a Corinthian Vessel, or any other kind made of Brass; and if it causeth no stain, it is then most excellent water. Also, if that that water be heated, and afterwards settled and poured forth, and that no Sand or Mud be found in the bottom, that Water is also very good. Also, if that Roots put in that water be quickly boiled, they shew the water to be good and wholsom. Also that the water in the Fountain be clear and pellucid, if that no Moss or Reeds grow about it: Or if that the place be not defiled with any filth, but a pure shew. These signs shew it to be tenuous and very wholsom.

Of Spring-water, whether it be wholsom, or not.

Proposition XXV.

A place being given, to make an apparent Fountain in it, if that it be possible.

That is termed an apparent Spring, as we have shewed in the 18th Proposition, where the water spouteth out, being sent from a more high place through a Subterraneous passage. Now such a Spring may be made, if that any Lake, River, or Fountain be in the adjacent Land, viz. a Pipe or Channel must be made under the Earth, from the given place to the adjacent Lake or River, through which the water may flow to the given place, as we shall shew in the following Proposition.

See Proposition V.

Proposition XXVI.

To bring a River, from a given Fountain or River, to the place given.

If that the Fountain or River given be higher than the place given, the work will be easy: Now this is found out by Geodetical or Surveying Instruments; and the operation itself is termed or said to wash the places, for the leading of the water; and the difference between the Altitude of the Fountain and the place given, is termed the Libramentum of the River to be lead. Therefore a Channel

must be dug from the *Fountain* or *River* unto the place given, the *Librament* of which must be greater or lesser, as we will have the *River* to be swifter or slower: For the Problem is undetermined for the most part in *Aqueducts*, that the celerity of the *flux* may be moderate. It is thus observed, that in the *Longitude* of a *Channel* of two hundred foot, the depression is no less than half a foot, (for otherwise the *water* will not flow, or else it will overflow: *Vitruvius* in one hundred foot requireth no less depression than half a foot,) neither ought it to be greater than an whole foot, or at most a foot and a half (otherwise it will flow with an over violent and quick course.) But if that the *Fountain* be not higher in the given place, there will be need of *Instruments*; concerning which you must consult *Mechanicks*, as also concerning many other things, which are to be considered in this Affair. By this Problem also is made a conjunction of two *Rivers*, when that a *Channel* is drawn from one *River* into another, that a *Navigation* may be made from one into another; as from *Duina* into the next *River*; from *Tanais* into *Volga*; from the *River Flamus*, in *China*, into *Nanchina*.

Proposition XXVII.

Some Rivers are noted and famous for long Tracts, some for Latitude, some for quickness of Course, some for the peculiar properties of the Waters that they carry; some for one or two of these causes.

Rivers are noted for several occasions.

The truth of the *Proposition* needeth no probation. I will only reckon up here those *Rivers* which are the biggest of all, viz. those of a long tract, which also are famous for *Latitude*: such only are sixteen in the whole Earth, as yet known, viz. the *Nile*, *Ob*, *Jenisea*, *Orellana*, *Rio del Plata*, *Parana*, *Maragnon*, *Omaranna*, *Ganges*, *Danube*, *Canada* or *St. Lawrence*, *Niger*, *Nubia*, *Volga*, *Jansu*, and *Flavus*.

After those, these following are famous for the breadth of their *Channel*, but not for the length of their *Course*, and which are about twenty in number, viz. the *Indus*, *Zaire*, *Cuama*; the *Rivers* from the *Lake Chiamay*, *Euphrates*, *Tanais*, *Petzora*, *Pesida*, *Tabat*, *Tyris*, *Santa Esprit*, *Amana*, *Magdalen*, *Julian*, *St. Jaques*, *Rhene*, *Albis*, *Mosi*, *Borysthenes*, and *Totou-teack*.

We shall only here contemplate the courses of the ten greater *Rivers*, leaving the more accurate explication of them, and the other *Rivers*, to *Special Geography*.

The River Nile.

1. *Nilus*, *Niger*, *Ganges*, run almost a strait course; the rest have many, and those vast *Curvatures*. The Spring of the *Nile* is placed in the *Lake Zaire* in the *South latitude* of 10 degrees; its mouth *Canopus* is in the *North latitude* of 31 degrees; it floweth from the *South* to the *North*: in some places it sendeth forth it self in a broad space, in other places it is very narrow: it hath two *Cataracts*; its tract or *Longitude* is about 630 *German miles*, or 2520 *Italian miles*, for which may be set down 3000 by reason of the windings; it overfloweth every year, as I have elsewhere treated of.

The River Niger.

2. *Niger*, a *River* in *Africa*, whose *Fountain* or *Spring* is in the 11th degree of *North latitude* from the *Lake*. Some write, that it is derived from the *Nile* by a *Subterranean passage*: the sign of it is, that it overfloweth every year at the same time as the *Nile* doth. One of its Mouths is in the same degree of *Latitude* in which the *Spring* is; but it is more removed from the *Equator* than 15 degrees of *Latitude*; it floweth from the *East* to the *West*. In some places it hideth it self under the *Earth*, and again emergeth. Its tract is about 600 *German miles*; but it will be lesser, if that you wholly neglect its great and noted bendings; and larger, if that all should be reckoned.

3. *Ganges*,

3. *Ganges* in *Asia*; its most remote *Fountain* is placed in the *North Latitude* of 43 degrees in *Tartaria*, but some bring it back to 33 degrees; its Mouth is in the *Latitude* of 22 degrees: it floweth from *North* to *South*. Its course is about 300 *German miles*: it overfloweth every year.

4. *Ob* also in *Asia*, very great, and every where broad; its Spring is placed in the 48 degree of *North latitude* in the *Mountains* of *Tartaria*, near the *Stone-Tower*. Its Mouth is in the 69 degree of *Latitude*; its tract is about 400 *German miles*, omitting its windings. It divaricateth it self into two Arms in *Siberia*, or rather sendeth forth a branch from its self, which having finished a crooked passage, returneth into its self and so formeth an *Island*; in which there is a *City* built by the *Moscovites* and *Siberians*, called *Jor-goet*.

5. *Jenisea*, another *River* in *Asia*, heretofore unknown to *Geographers*, but observed by the *Moscovites*. It is found to be greater than the *Ob*, from which it is distant ten weeks voyage towards *Tartaria*; at the *Oriental shoar* of which a ridge of *Mountains* are extended in a long tract: on the *Occidental shoar* inhabit a People called *Tingesi*. Every year in the *Spring* it overfloweth the space of 70 miles towards the *Western lands*, at which time the *Tingesi* betake themselves with their *Cattle* and *Housholdstuff* into the *Mountains*, on the *Eastern shoar*. Its *Fountain* and *Outlets* are unknown; its tract is supposed to be no lesser than that of the *Ob*.

6. *Pesida*, removed some days Journey towards the *East* from *Jenisea*: its *Oriental shoar* is thought to touch on *China*, and the Kingdom of *Cathay*: its *Fountain* and *Outlets* are unknown. It is none of the number of the great *Rivers*; but I have briefly touched on it, because that no *Geographers* have hitherto made mention of it; as also of the *River Jenisea* and *Tyris*.

7. *Orellana*, in *America*, (so called from *Francis Orelli*) is accounted amongst the greatest *Rivers* of the *Earth*. Its *Fountain* is in the Kingdom of *Peru*, in the Province of *Quito*, in the *South latitude* of 72 degrees, (but this is not altogether certain; its Mouth is fifteen miles, in *Latitude* two degrees Southerly. Its tract is said to be 1500 *Spanish miles*, by reason of its great number of bendings, when that in truth it extendeth not 700. Others confound with it, or make the *River Maragnon* to be a branch of it. It is in some places four or five Leagues broad; but it receiveth not its water so much from a *Spring*, as from *Rains* falling on the *Mountainous* parts of *Peru*; so that in the dry months of those *Mountains* it carrieth little water. And indeed the *Moderns* do much detract from its magnitude.

8. *Rio de la Plata*, in *Brasil*; its *Fountain* is in the *Mountains* of *Peru*: Its Mouth is in the *South latitude* of 37 degrees, and that is said to be about twenty miles; but when it overfloweth it hath many *Outlets*, which some account for one; at that time it carrieth not much water. The *Natives* call it *Paramaguasu*, that is, a water like the *Sea*, as some observe.

9. *Omaranna* also, a *River* in *Brasil*, flowing from the *Mountains* of *Peru* in a long tract. These three great *Rivers* in *Brasil*, viz. *Orellana*, *Rio de la Plata*, and *Omaranna*, meet somewhere in some *Lakes* in the *Mediterranean* places of *Brasil*; and emerge again, being disjoined.

10. and lastly, *Canada* or *St. Lawrence*, in *America Septentrionalis*: its *Spring* is in the *Lake* called *des Iroquis*. Its large Mouth is in the 50th degree of *North latitude*, and its tract is no lesser than 600 *German miles*.

Proposition XXVIII.

Whirlpools are found in the Channels of some Rivers.

So in the *River Sommona*, between *Amiens* and *Abbeville*, in *Picardy* in *France*, is a secret *Whirlpool*, into which the waters rush with such violence, that their found may be heard for some miles.

Proposition

Proposition XXIX.

River-water is more light than Sea-water.

Sea-water
more heavy
than River-
water.

The cause is easily known, to wit, *Sea-water* carrieth much *Salt* in it. Thence it hapneth, that many things sink to the bottom in *Rivers*, which float on the *Sea*; which frequently is seen in *Ships* heavy laden, that are raised up in the *Sea* higher than when in *Rivers*. Now various is the proportion betwixt these *waters*, because that the *Sea-water* is not every where of the same gravity, nor the water of divers *Rivers*; but yet the proportion is about 46 to 45, so that 46 ounces of *River-water* do equally ponderate 45 of *Sea-water*.

CHAP. XVII.

Of Mineral Waters, Baths, and Spaws.

Because that there are many kinds of liquid Bodies, or Waters, the peculiar properties of which men do admire at; therefore *Geographers* are wont to treat of them: But all of them hitherto, except a bare recital of their Names, and a reckoning up of some wonderful Fountains, or Springs, have added nothing to solid knowledge. But we shall treat more clearly of them, and that with a declaration of their causes.

Proposition I.

No Water is pure and Elementary, but containeth or hath admixed particles, such as are found in Terrestrial Bodies: These particles are not only Earth, but also they are various; as Oyls, Spirits, and the like. That is termed Mineral-water, which containeth so many, or such particles of a different nature from the Water, so that from them it gaineth, or hath notable qualities, which we discover by sense, or the properties are notable by sense.

No Water is
pure, but hath
admixed par-
ticles.

The truth of the Proposition is manifest by Experience, and is proved both from the differences of tastes, and from distillation: and all Naturalists agree, that simple or pure water, as the other Elements separated from others, do not exist in nature. The cause is, the various and perpetual agitation of the particles; but in Waters, that I may say somewhat in particular concerning our matter in hand, by the cause of admixtion of Heterogeneous, they receive Spiritual particles. The Rain, and the Air it self, touching the water, consists of divers particles; therefore all waters, have admixed particles of another nature; but there is not the like quantity in all of them. Into the Rhine indeed, the Danube and Albus, and into all great Rivers, other Riverets do flow in, impregnated with innumerable particles, and in such quantity, that they are evident to the senses: but because, besides these, many other Riverets do flow into them, not impregnated with so great a quantity of Heterogeneous particles as are discoverable to the eyes; and because that the greatest part of the water that they carry, consists of Rain and Air, therefore also in these greater Rivers, those Heterogeneous particles are not easily discovered, but

but must be separated from them by Art, if that any one will have them discovered to the sense. But we shall especially call them *Mineral waters*, which have some notable property beyond the common waters; that is, that contains such an admixture of *Heterogeneous particles*, that thence possess a notable and sensible quality.

Proposition II.

Mineral Waters are of three kinds.

Some are *Corporeal* (we want an apter word,) others *Spiritual*, othe s both *Corporeal* and *Spiritual*. I term those *Corporeal Mineral waters*, which contain solid and fixed particles of *Minerals*; so that these may be discovered and separated by the sight. These *Corporeal Bodies* are twofold; some carry those particles of *Minerals* of a very great magnitude, that without any trouble, or very little at the least, they may be beheld in the water, and to speak properly, they are not commixed waters. Such are those of which we have spoken in the former Chapter, because that the grains of *Gold*, *Silver*, and the like, are contained in their waters; therefore they are termed *Gold* and *Silver-bearing Rivers*: but these waters in property of Speech, are not to be termed *Mineral*, because that they have not these particles commixed with them, but free; neither do they receive any property or quality from them: Yet because that men also admire such *Rivers*, and the explication of them, hath great affinity with the enodation of *Mineral waters*, properly so termed; therefore I comprehend them under the general appellation of *Mineral waters*. *Bituminous Fountains*, and the like, may be reduced under this Class.

Of Mineral
waters.

But those are termed more properly *Corporeal Mineral waters*, which contain indeed solid particles of *Minerals*; but so little, small, and altogether commixed, that they are not presently discovered by the sight; but either by Art, or a long tract of time, subsiding and concreasing, and are reduced into a sensible quantity; as are *Ja. Springs*, *sulphureous Fountains*, and such like; and *Chymical waters*, in w^h *Metals* are dissolved.

Corporeal
Mineral waters.

Spirituous waters are, that contain only a *volatile Spirit*, such as is found in *Minerals*; but mixed particles, and therefore none can be elicited from them apparent to the sight.

Spirituous wa-
ters.

These are termed *Corporeal* and *Spirituous waters* together by me, which have both fixed or solid, and volatile or *Spirituous particles* of *Minerals* in them. We shall alledge Examples of the Species of them in the following Propositions.

Proposition III.

To explain, how Mineral Waters are generated.

1. If that *Water* be carried by a violent torrent or course through *Subterraneous passages*, in which *Metallick Earth* and *Minerals* are less thick; it is manifest, that the *Water* may take and carry away from these with it grains of those *Mineral waters*: this therefore is the generation of *Corporeal Mineral waters*, that carry grains.
2. If that the *Minerals* be imperfect, or less dense; as *Vitriol*, *Sulphur*, and the like: or also the *Salts*, which of their own nature are easily united to the waters, if that the *Waters* or *Rivers* be carried through these *Earths* (without *Channel* or *Aqueduct*, as we have explained in the generation of *Fountains*) the water cometh to the *Fountain*; this will have the *Atoms* of these *Minerals* admixed, and it will be a *Corporeal Mineral water* of a subtile conjunction, according to the *Atoms*. Now whether that the water can unite the *Atoms* of *Metals* after this manner to it self, is questioned; because that they are hard and solid, neither are they easily united to the water. I suppose it possible to

Of the gene-
ration of Mi-
neral waters.

to be done, but not by simple water, but by a salt vitriolated water, which is like unto the *Aqua fortis* of the Chymists: For as these waters of *Aqua fortis* dissolve Metals into Atomes, and intimately unite them to themselves, so that they sink not to the bottom, unless that they be separated by *Avt*: So also if that such waters be carried through metallary earth, they are able to dissolve the metallick particles, and unite them to themselves. After this mode is the generation of mineral corporeal waters of the second Classis explained.

3. In the bowels of the earth, before that Metals are generated, vapours and fumes are condensed unto the extant Angles of the Rocks unto which they adhere; and first they meet together in a soft substance, and at length they are condensed: therefore if that the waters are carried or glide through the earth where such vapours are, and are raised, they are impregnated by them, and so spirituous mineral waters are made. But imperfect Minerals, after another mode, cause mineral waters of their own nature, viz. because that being heated by their own or subterraneous heat, they send forth spirits and vapours, as Salt, Sulphur, Vitriol, Coals, and such like: and such fumes and exhalations are continually made in places of such Minerals, through which if that the water glide, it is impregnated with the spirit. There are some that suppose these spirituous waters may be generated only by being carried through the metallick earths, or by a continual stay upon them, or in their Mines: but it is certain by experience, that the waters receive no quality from the Metals and Minerals, if that they should lye 100 years immersed in them: therefore laying aside this opinion, we affirm that those waters are generated, or spirit received, from, first, the seed of Metals, as I may so say, or their Primordia; or secondly, we may say, that those waters are now impregnated by other subtle Spirits of Vitriol or Salt, by the benefit of which a Spirit is extracted from the hard Metals: But I attribute the less to this cause, or mode of generation, because here ariseth a question again concerning the generation of the spirituous water of Mineral, Vitriol, and Salt.

4. From these together, it is evident how mineral waters, that are both corporeal and spirituous, are generated.

Proposition IV.

There are innumerable kinds of mineral waters, according to the variety and diversity of the particles which they contain of divers Minerals.

In the precedent Proposition we have explained, how that mineral waters may receive those particles (from which their admirable qualities do arise) from Minerals or Fossils. Now because that there are various sorts of Minerals, thence it cometh to pass that the mineral waters are various and different in their qualities; yea, they are almost infinite: For neither only are every one of these waters impregnated by one kind of mineral, but together many of many; wherefore mineral waters will either be simple or mixed, and the mixed will have something either from three or four, or from many Fossils or Minerals.

Thence 1. are Metallick waters, viz. of Gold, Silver, Copper, Tin, Lead, Iron.

2. Sali waters, viz. of Common Salt, Niter, Alome, Vitriol.

3. Bituminous waters, Sulphureous, Antimonial, of Coals, and of Amber.

4. The waters of the Earth and Stones, viz. Lime-waters, Chalk, Ocher, Marble, Alabaster.

5. Mercurial waters, and the like.

These

These denominations, or kinds of waters, are to be understood according to the triple mode, by which in the second Proposition we said, that Mineral waters were, 1. Some Corporeal, and even manifest to the sense; or Corporeal by a subtle and accurate commixion. 2. That others were Spirituous. 3. That others were Corporeal, and also Spirituous. These differences must be applied to every kind of Mineral-water, viz. (to demonstrate by one or another Example) Gold-waters are, 1. Corporeal, which carry grains of Gold of that magnitude, that with little trouble they are discernable to the sense, neither have they any accurate coherencies admixed unto them. 2. Corporeal waters, which possess very small particles of Gold, and indeed very closely connexed to the water; such waters I suppose to be. Although the nature of Gold be such, that the least grains in the water sink to the bottom, yet that such may be, is manifest from the *Aqua Regia* of the Chymists, in which Gold is dissolved into Atoms. But this *Aqua Regia* is not simple; therefore neither do those waters, that are found in nature to have Atoms of Gold admixed, want other particles of Minerals. 3. Spiritual Golden-waters, which conceive a spirit and vapour in the Earth, from whence Gold is wont to be generated. 4. Golden Corporeal-waters, and also Spiritual, which possess both Atoms of Gold, and a vapour generating Gold.

After the same manner the Readers must apply this fourfold difference unto every kind of Mineral waters, both simple and admixed, (whence innumerable kinds do exist; for either the bodies of the Minerals, or the Spirits, or the body of one with the spirit of another, are conjoynd in the water:) so Leaden-waters are fourfold, viz. 1. Manifestly Corporeal. 2. Corporeal, of a subtle mixture. 3. Infected with a Spirit of Lead: and 4. Impregnated both with the Spirit and Atoms of Lead. So those four divers participations of Minerals are to be applied to Vitriol, Sulphureous, and Mercurial waters, and the like; and more especially to these, to wit, to Salt, Vitriolate, and Sulphureous, because in these, Nature it self doth exhibit this fourfold variety. I doubt whether that Corporeal waters of a mixed subtilty do exist. Spirituous Metallick waters are very rare; but Sulphureous and Salt waters are frequent. But the Corporeal and Spirituous, because these sorts of Metals are both found in many places of the Earth, and also in a greater quantity, and easily suffer their particles to be gnawed off; they send out also frequently, a fume and vapour. We will explain by one Example this fourfold variety of participation, and that in Gold; 1. In the preceding Chapter and the sixteenth Proposition, we have enumerated those Riverets which carry grains of Gold, and with this Treasury make glad the Natives; such are many in the Earldom of Tirol, and the places adjacent: and we have said that the Rhine it self, Albis, Danube, and most great Rivers in some places carry grains of Gold (as also of other Metals and Minerals;) by reason that they receive Golden, or Gold-bearing Riverets. The Rhine carrieth grains of Gold commixed with Clay and Sand in many places; but especially at these, 1. Near Curia in Rhetia; 2. At Meinsfeld; 3. At Eglinsan; 4. At Secningham; 5. At the Town Augst, not far from Basil; 6. At Norinburg; 7. At Wormes; 8. At Seltz; 9. At Mentz; 10. At Bacherack; 11. At Bononia, and the like. The Reader may see those Gold-bearing Riverets which the Rhine receiveth in Thurnbuserus, as also those that the Danube and Albis do receive. In the water of this, viz. the Albis, are found grains of Gold: 1. At Leutmeritz in Bohemia; 2. At Purn; 3. At Dresdain in Misnia; 4. At Torga; 5. At Magdeburgh; 6. At the Tower of Lunenburgh, fifteen miles from Hamburg. Concerning the Gold-bearing Riverets consult the forecited Book of Thurnbuserus; where also you may see those that carry other Metals and Minerals.

These Waters are therefore the Corporeal Golden-waters of the first mode, viz. those that carry grains of Gold; which less properly are termed Mineral or Golden, because the Golden-grains are not permixed with the water, but are carried down by the rapid Current of the water; and the waters themselves are simple or uncompounded. 2. Golden Corporeal-waters of a subtle commixion,

See Proposition 11.

A fourfold difference of Mineral waters.

Many kinds of Mineral waters.

commixtion, to wit, the Atoms of whose waters are mixed with the Atoms of the Gold; as we have said of the *Aqua Regia* of the Chymists, which dissolveth the Gold, and uniteth it to itself by Atoms. And now, because there may be like waters, which whether they be carried through *Golden-lands* or *Mines*, may gnaw off and dissolve some *Golden-Atoms* of it with Earthly ones; such *Golden-waters* many *Riverets* seem to be, which *Thurnbuserus* writeth to participate of Gold, and reckoneth them up in the description of the *Danube*, *Rhine*, and other great Rivers.

3. The *Golden Spirituous-waters* are very few, and some of those are they peradventure, which *Thurnbuserus* enumerateth. Now such waters are less noted or sensible, because *Golden-Earth* and *Mines* are very rare, and that in a small quantity: Moreover where the *Mines* are, a quantity of other Minerals are also together with the Gold, whence the water receiveth many more Spirits. Yet some *Riverets* in the high *Alpes* of *Bohemia*, are said to participate of these *Golden-Spirits*; also in *Silesia*, and the Mountain that they call *Fichtelberg*. The *Pepper-Baths*, in the Bishoprick of *Curia*, are believed to be impregnated with such a Spirit; but by reason of the admixture of other Minerals in greater quantity, the waters receive a less sensible quality from it.

4. *Golden-waters*, which carry both Atoms of Gold and Spirit, are some of the *Riverets* mentioned by *Thurnbuserus*.

We will add the Example of *Salt-waters*:

Example of
Salt-waters.

1. *Salt Corporeal-waters*, viz. which carry the more gross particles of Salt, and not accurately mixed; they are many, and sufficiently known to any person, as certain Springs of which Salt is made: Hitherto appertaineth the *Sea-water*, if that it be made more gross by the heat of the fire.

2. *Salt Corporeal subtile-waters*, which contain the Salt reduced into little particles; they are those, which when they are most Salt, yet withal they are very pellucid and subtile, as many *Salt Springs* and *tenuous Sea-water*; although that there be great difference in this subtile commixtion: Hitherto appertaineth the *Urin* of all Animals.

3. *Salt Spirituous-waters*, which contain not the particles of Salt, but the spirit of Salt: they are such, that if you should boyl many Vessels of them, yet notwithstanding you should receive no Salt. Not a few of these are in Germany, and elsewhere; but they are rarely found simple.

4. *Salt Corporeal*, and *Spirituous-waters*, which have particles of Salt and Spirit.

Almost all the *Corporeal* have also some portion of *Saline Spirit*, but most of them very little: So, near the City *Saltzinga*, not far from the *Rhine*, the Fountains are salt; the water of which, though more salt than other waters, yet it affordeth less Salt, because its sharp and salt sapor is sharpened by a spirit or volatile Salt, that flyeth away in the boylng. Hence it is manifest how this fourfold difference of participation is to be applied unto every sort of Mineral waters, viz. *Vitriolate-waters*, *Alom-waters*, *Lead-waters*, and the like.

Proposition V.

To reckon up the noted differences of Mineral Waters.

The noted
differences of
Mineral Waters.

In the foregoing Propositions we have explained the true kinds and differences of Mineral waters, taken from the very essence of them, viz. from the particles of the Minerals which they carry, or by which they are impregnated; but those differences, because they do not so strike the senses; and moreover, by reason of the various mixture of Minerals, communicate various properties to the water, wherefore they are less vulgarly known; for the denomination of all Bodies ariseth from manifest qualities on the Sense, as also doth the celebrity of waters among men. The explication and cause of which

which apert qualities and properties must be sought from the inmost composition of things. Therefore the noted and famous differences or species of Liquors flowing from the Earth, and also known to the Vulgar sort of men, are these ten; to wit, 1. *Sower-waters*: 2. *Bitter*: 3. *Hot*: 4. *very Cold*: 5. *Oily* and *Fat*: 6. *Poysinous*: 7. *Coloured*: 8. *Ebullient*: 9. *Water* that converts less hard into harder, or after any other mode, changing any Bodies cast in or stained with them: 10. *Salt-waters*: And in the 11th place we may add those, which are endowed with any other wonderful property. Unto these Classes, those that are studious in these things may reduce all Waters, which are found described in Authors. We shall only in brief shew their generation and differences, and alledge some Examples.

Proposition VI.

To explain the cause or generation, difference or kinds of Acid or Sower Waters.

Great is the celebrity of Acid waters or Springs; they commonly call them Spaws.

OF Sower
Waters.

1. They arise from the admixture of a Spirit of Vitriol, Salt, and Alom; which Minerals, being partly simple, and partly more or less admixed with other Minerals, are found in the cavities of the Earth, especially in Iron. We prove this to be the true cause of Acidula's and Spaws: 1. By reason that almost every where, where such Acid waters break out, Mines of Vitriol, Salt, and Alom, are found. 2. Because the Spirits of Vitriol and Salt, are Acid, as also some Spirits of Sulphur; as is evident from Chymistry. 3. Because that from these kind of Acid waters, no Acid body, but Spirits, is separated, which are altogether like unto the Spirits of Vitriol and Salt.

2. Great is the quantity of Acid waters or Spaws in divers Regions, where Mines especially abound. The cause is, because that an Acid, Sower Spirit is almost in all Bodies; (by reason that we have shewed, that it is Elementary, in the Seventh Chapter and first Proposition) it is found in all herbs and fruits.

3. The difference of Spaws is found to be notable: Some are found to be so sharp or fowr, that men make use of them instead of Vinegar. Such a Spring is found in *Nicana*, a Province of *Sicilia*: In Germany, the Fountain at *Elleboga* is of a wonderful Acidity. Other Acid Springs are termed *Winy*, because that by their sharpness they come near the grateful tast of Wine; amongst which, that is famous which is in the Earldom of *Catzenellebogen* in Germany, at the Town *Schwalbach*. In the Province of *Lyons* in France, at the Town of *St. Baldomare*, is a Fountain termed *Fontaine forte*, that is, the Strong Fountain: it supplieth the want of Wine, and if that one fourth part of it be mixed with Wine, it will want nothing of the tast of Wine; if it is poured on Flour it will presently ferment. They can boyl no Meat in it, for by reason of its subtilty it flieth away: It is very wholesome, so that the Inhabitants seldom use a Physician.

The difference
of Spaws.

In *Aquitaine*, not far from the City *Bessit*, is the like *Winy* sharp Spring; unto the waters of which, if that you only admix the sixth part of Wine, you will imagine, that you drink pure Wine without any admixture of water. Nigh to Rome is an *Alomys* sharp Fountain, which being mixed with Wine, maketh a very grateful Drink. Great is the number of Acid Springs in the Upper Germany, whereof some flow into the Danube, and others into the Rhine. Very many are in the forementioned Earldom of *Catzenellebogen*, in the Province of *Triers*, in *Tirolus*, *Rhetia*, *Vindelicia*: a noted one is near *Anderna*, called *Heilbrun*. In the Province of *Toledo* in Spain, near the Village *Valentioka*, are Springs, which at the bottom are found Acid, and of a Winy tast, and in the upper part, sweet; which *Baccius* thinketh to happen, because that the Nitrous and Acid parts do subside and sink to the bottom. But I suppose, if that the Relation be true, that it proceedeth from the subtilty of the Spirit, which being brought to the superficies, presently do expire.

T 2

Other

Other *Acid Fountains* are astringent, and contracting the palate, which is a token of *Iron particles*, or of the admixture of *Vitriol*, as also of *Alom*.

The *Water of Acid Fountains*, in *Rainy and Cloudy weather*, is found less *Acid*; which is a sign of an admixture of condensed *Air*. Also, if that the *water* be exposed to *heat*; or if it stand in an open *Vessel* for some hours; or if it be carried a long *Voyage* not well covered, in cold *Vessels*, it presently loseth its *Acidity*; which is a sign, that the *Acidity* of them dependeth on a subtle *Spirit*.

Yet they also have *Aloms*, and the very *Vitriol*, *Alom*, *Iron*, *Salt*, *Gravel*, and the like. This is proved from the matter that is discovered to adhere to the *Conduit-pipes*.

The *Studious* may collect *Examples* by reading of *Authors*: At least two hundred *Acid Springs* or *Riverets* run into the *Rhine*; but by reason of the subtilty of the *Spirits*, nothing of acidity is discovered in the *Rhine*.

Do you demand, why there are no *Acid Fountains* in the *Northern places*? I suppose that cause to be the defect of *Subterraneous heat*, and an over great condensation of the *Earth*; as also for that cause it cometh to pass, that little or no *Gold* is found in those *Regions*.

Proposition VIII.

To explain the generation of hot Springs, termed Baths, and the places of the more famous of them.

Of the generation of hot Springs, or Baths.

A *Spring* in *Izland* is judged the most fervid of them all, whose *water* little differeth from that, which hath arrived to the highest degree of *heat* and boiling on the fire. But *Caronius* writeth, that in *Japan* there is a *Spring* so hot, that no *water* can be brought to that degree of *heat* by the most vehement fire. It floweth not continually, but twice in a day for one hour with a great force of *spirits*, and maketh a great *Pool*; which another hath informed me to be called by the *Natives*, *Singacko*, that is, *Hell*.

After those, the hot *Fountains* or *Baths* of *Baden* in *Helvetia*, are famous. Then the *Baths* of *Appona* in *Italy*. Of *Vulgar Baths* there is a great number in the *Upper Germany*, as also in other places. In *Scotland* is the *Lake* and *River Ness*, which is not hot, yet it is never congealed with Cold.

The cause and generation of *Baths*, is first the admixture of *Sulphureous particles*, whilst the *water* is carried through *Subterraneous passages*; or rather, whilst that it glideth through the *Sulphureous Mines* to a collection about the *Springs*. 2. The vapours of *Smoke* and *exhalations* within the *Earth*, where *Sulphur* is pure or impure, as *Peat*, *Coal*, *Amber*, and the like; for these *materials* continually send forth a calid or warm fume, which heat the *waters* carried thither, or gliding through those places. Yet *particles* of *Alom* are admixed to many, nay the most *Baths*; as also of *Iron* and *Niter*, whence they have somewhat a sharp and astringent tast or sapor. Almost all the *Baths*, which we know, flow without ceasing, except the *Pepper-Baths* of *Germany*, which are famous in *Rhetia*, not far from *Curia*. And besides *Sulphur*, they contain something of *Gold*, and not a little *Niter*. The *water* of these *Baths* breaketh out every year about the third of *May*, and it ceaseth to flow about the fourteenth of *September*. The famous *Baths* in *Germany* are the *Plumbariae* in *Lorrain*; *Emsbada*, above *Constantina* in *Alsacia*, near *Gebersweil* in the *Marquisate* of *Bada*; *Wildbad*, in the *Dukedom* of *Werthebergh*; The *Blasiana* near *Tubin*. There are many also in *Japan*, and the *Indian Isles*. There are such hot ones in the *Islands* of the *Azores*, that an *Egg* may be boiled in them.

Proposition

Proposition IX.

To explain the generation of oily and fat liquors flowing from the earth, and to enumerate the places of the earth in which they are found.

Some *Fountains* send forth a *bituminous liquor*, some a *fat water*, or *water* on which drops of *oyl* do flow. In *Scotland*, two miles from *Edenborough*, a *Fountain* floweth, on the whole *Superficies* of which drops of black *oyl* do swim: the *Inhabitants* use it to mollifie the *skin*, and to take away *scabs*. So the *River Cilicia*, termed *Liparis*, was famous amongst the *Ancients*, in which those that washed themselves, were anointed by the *water*: whether it be so at this day, I much doubt. So likewise there was a *Lake* in *Ethiopia*, which anointed those that swam it. Also there was a *Fountain* in *India*, which on a clear day sent forth a great quantity of *oyl*. In *Zant*, and about *Dyrnachium* and *Appallonia* (as *Vitruvius* writeth) there were *Fountains* which vomited out abundance of *pitch* with *water*. There was a *Lake* in *Babylon* of great magnitude, called *Lemme Asphaltu*, it had *liquid Bitumen* swimming upon it, with which, the black *Semiramis*, encompassed *Babylon* with a *Wall*. At this day also at *Monasterium* in *Bavaria*, is the *Fountain Deggsee*, on the top of which *oyl* swimmeth, and is daily taken off. The *Acid waters* of *Schwalback*, if they be taken in a *Vessel*, and have been settled for some days, small drops of *oyl* swim on the top of them. There is a greater quantity in the *Fountain* termed *Oelbrum*, not far from *Hagenaw*, at the *Village Lamperescholch*. Also in the many *Baths* are found *bituminous particles*, if so be that they stood quiet for some days; as in the *Baths* of the *Kingdom of Naples*, termed the *Bath of Petrolei*.

Of oily liquors.

Now the *Fountains* that send out not an *oyl* swimming on the *water*, but a meer fat or bituminous liquor, are also many. Near *Gersbachium*, in the *Valley* called *Lebersthal*, from an antiquated and exhausted *Mine*, *oyl* or *bitumen* floweth, with which the *Country Swains* besmear their *Cart-wheels*. Neither do the *Inhabitants* know its excellency. In the *Isle* of *Sumatra* is a *Spring* from which *Naptha*, like unto *oyl*, floweth; others say that it is a kind of *Balsom*: they report *Fountains* of *Amber* to be there likewise. In *Peru*, near the *sea*, is a *bituminous Fountain*, sending forth a *Branch* or *Riveret* into the *Sea*. The *Natives* use it instead of *pitch*, neither do they use any other matter. In *Persia*, not far from *Schimachia*, at or near the high *Mountain Barmach*, in a *Valley*, are about thirty *Fountains* of *Bitumen* or *Naptha*, but runing in deep *Wells* with a great force; the *Depth* is about two *Ells*, wooden steps being made for the conveniency of descent, it sendeth forth a *Sulphureous* and strong *Spirit*: it is of a twofold colour, in some red, in others white.

The cause of these *bituminous Fountains* is a *sulphureous* and *bituminous matter* in the bowels of the earth, thrust forth by a *heat* and *spirit*. The cause of the differences is to be sought from the differences of the fat matters themselves; as *Succinum*, *Amber*, *Oyl* of *Petrolei*, *Pitch*, *Naptha*, and the like.

Proposition X.

To explain the generation of bitter water, and to reckon up the places of the earth in which they are found.

Many *Fountains* and *Wells* in the *Regions* of *India*, on the *Ghoromandel*, have bitter water, although that they ebulliate in, and flow from *Rocks*. In *Pontus*, a *Region* of *Asia minor*, a little *River* termed *Exampeus*, at the *Town Callipadus*, is very bitter, it rendereth the *River Hypanis*, into which it floweth, also very bitter.

Of the generation of bitter waters, and the places where they are found

They

They arise from impure *Sulphur, Bitumen, Nitre, Ink, Copper*: as *water* left a long time in a *Copper vessel* acquireth a bitter taste.

The Lake *Asphaltites* in *Palestine*, which is called *Mare Mortuum*, or the *Dead Sea*, hath a bitter *water* by reason of the impure *Bitumen*, whence it ought to be referred to the fat *waters* of the former *Proposition*. It sendeth forth a stinking scent and vapour: all things without life sink to the bottom; but it suffereth not any *Animal* to sink; neither doth it grow sweet, although that it continually swalloweth up the River *Jordan*. It is venomous by reason that it containeth *Arsnick*.

Proposition XI.

To explain the cause of very cold Springs, and to enumerate the places of the Earth where they are found.

The cause of cold Springs.

In the Province of *Dauphin* in *France*, not far from *Vienna*, is a *Fountain* of so great cold, that the mouths of those that drink it are swelled with it, neither can they endure their hands in it: it is not diminished for the water that is drawn out of it, nor augmented by the *water* poured into it. In *Arabia* or *Aethiopia* are most cold Springs, although that the heat of the *Sun* be most excessive there. In *Siria*, not far from *Gretz*, are *Fountains* so cold at the bottom, that none can drink any *water* running or drawn from thence.

In a mile from *Calma*, a *Spring* sendeth forth water as it were boiling, with a great wind, when yet it is very cold; hence they call it *The mad water*. The cause of the coldness of these *Fountains* are, 1. The admixture of *Nitre* and *Alom*, also of *Mercury, Iron*, and the like. 2. The depth of the *Spring*, by reason of the defect of the *Solar Beams*, and of the *sulphureous subterraneous heat*.

There are also some *Springs* which are sometimes cold and sometimes hot. In *Catalonia*, the Lake and *Fountain Salsula* in the *Winter* is hot, and in the *Summer* very cold. This is common to it, with many others. I think the cause to be, that in the *Summer* the pores of the *Earth* are open, through which the hot *Spirits* break forth; in the *Winter* they are closed, whence within there are hot *Furnaces* that heat the *waters*: So some *Fountains* are more hot in the night than in the day.

Proposition XII.

To explain the generation of those waters which seem to change bodies into another kind; and to reckon up the places of the Earth where they are found.

Of the generation of waters which change bodies into another kind, &c.

There are some *waters* which change wood into the hardest stone. In *Ireland*, above the City *Armagh*, in a *Pool* not very large, a stake of wood if it be fixed for some months, the part that sticketh in the *Mud* will be *iron*, the part which is touched with the *water* is turned into *stone*, and the rest remaineth wood; so *Giraldus* and *Maginus* relate: but *Brietius* sayeth, I know not by what authority, that it is a meer fable. The *waters* of *Loches* in *Blois*, a Province in *France*, turn all things put into it into *stone*. At the City *Senon* in *Burgundia*, near a Lake, a *Spring* floweth which hardneth into *stone*. *Vitruvius* saith, that in *Cappadocia*, between *Mazaca* and *Tuana*, is a large Lake, which changeth a reed or wood put into it in one day into *stone*. In *Bohemia*, near the Baths of *Charles*, is a *Fountain*, in which wood lying long, is changed into *stone*. Other *waters* are thought to change *Iron* into *Copper*, which yet really they do not; but by reason that *waters* themselves carry particles and *Spirit* of *Copper* and *Vitriol*, therefore they dissolve the particles of *Iron*, and by degrees take away from it, which whilst that they do, the *Copper particles* of the *water* are repaid in the place of the *Iron* ones taken away, or there adhere whilst that they glide with the running water.

The

The reason of those that change wood into stone are these:

1. Some do not change the wood it self into stone, but earthy, stony, and saline particles contained in the water, do apply themselves to the wood, and so, as it were, cover the wood with a stony crust, and do not really change it.

2. Some do not change the wood into stone, but cause a stony hardness to the wood, which some mineral waters may possibly do.

3. If that some waters have truly changed wood into stone, I conceive it to be done after this manner; that chief difference is found by sight between the wood and the stone, that in the wood there are certain long Fibres or Veins, unto which the particles do cohere, and those are less thick: but in stone the particles are like unto Atoms, without any certain extension into long Fibres. If that therefore any water dissolve, and as it were grind the particles cohering in the wood, according to a long line, so that now they do no more cohere after this mode, but yet are more condensed; there will be no more any great difference between the wood and stone, as may be observed by our Eyes; yet it is probable that these mineral waters communicate some substance to the wood it self.

There are other waters whose faculty is reported to be able to change the colours in the hair of man or beast.

Proposition XIII.

To explain the cause of poisonous and death-causing waters, and to reckon up the places where they are.

Such is the Lake *Asphaltites* by reason of its *Arsenical Bitumen*. In times past, famous was the *Fountain* of *Terracina*, which was called *Neptunicus*, in the Region of the *Volsci*, of which those that drank were deprived of their lives; therefore it was filled up with stones by the Inhabitants. In *Thessalia* a *Fountain* springeth of which no Cattle drink, nor no kind of Beast approacheth. Famous, or rather infamous, is the water, which in the Region of *Arcadia*, called *Nonacris*, the Ancients write to drop exceeding cold from stony Rocks, therefore called the *Infernal* and *Stygian water*, which no vessel, either of silver, brass, or iron, could be preserved in, without breaking. And by this water Historians report that *Alexander* the Great was killed by *Jolla* Son of *Antipater*, and that not without the infamy of *Aristotle*. At this day many mortiferous waters are found in the Places or Regions called the *Alpes*; but most of them are stopped with stones, which is the reason that so few death-causing *Fountains* are known.

Now the generation of such water is, if the water glide or flow through *Arsenical, Mercurial, or Antimonial Earths*, and are impregnated with their fumes: For as the smoke or fume of *Arsnick* killeth living creatures, so waters impregnated with such a fume, do the same.

Proposition XIV.

To explain the generation of coloured waters, and their differences, and to enumerate the places of the Earth in which they are found.

At *Chinen* in *France*, water floweth from a Cave of somewhat a yellowish colour. In the Kingdom of *Congo* a Riveret floweth of a red colour into the Sea. In some places waters flow of a black, of a green, and such like colours, but they are but few.

The cause of the colour of these waters is, that they glide or run from lands, before they come to the *Fountain*.

Of coloured waters,

Proposition XV.

To explain the generation of Salt-waters, and to reckon up the places of the Earth in which they are found.

Of the generation of Salt-waters.

The generation is twofold: 1. From the Ocean they come through Subterraneous passages, and flow to the Superficies of the Earth. 2. They are generated of a Salt contained in the Earth, such as is found in many places, through which whilst the water glideth, it conceiveth Saline particles and spirits, before that it arrive at the Spring. Great is the plenty, and that known to every one, of Salt Fountains. We have spoken in the preceding Chapter, and this matter is easily known, by reason of the abundance of Salt, almost every where lying hidden in the Earth, seeing that Salt it self is an Element.

Proposition XVI.

To explain the cause of Ebullient Fountains, and those that break out with a great spirit and wind; and to enumerate the places of the Earth wherein they are found.

Of ebullient Fountains.

The cause is partly a Sulphureous spirit, and partly a Nitrous spirit commixed with water in the Earth: if that it be a Sulphureous spirit, the waters are hot; if Nitrous, cold: For neither are all the waters which ebulliate like to those that are hot, hot, but many of them are cold, as is evident from that near to Culma, called a mad water, of which we have spoken in the Twelfth Proposition. The River Tamayus in Galecia, ariseth from a Lake; in its rising, for some months of the year, it sendeth forth a mighty noise. In Japan that wonderful hot Fountain, of which we have spoken in the Eighth Proposition, not above twice every day breaketh forth, for the most part for one hour; now when that the water beginneth to flow, it is carried with so great a force and vehemency of wind, that it moveth the vast Stones incumbent on the Well, and leapeth to the height of three or four Ells with so great a noise, like unto the discharge of Cannon. In Westphalia a Fountain breaketh forth, termed Bolderborn, from its noise.

Most of the Spaws and Baths break forth with an abundance of wind, and ebulliate as if they boyled; a Sulphureous spirit causeth this in the Baths, and in the Spaws, the Spirits of Vitriol, Nitre, and the like.

Proposition XVII.

To enumerate the kinds of waters which have other certain wonderful properties, and to explain the causes of them.

Other kinds of waters of wonderful properties.

Unto this Classis all others ought to be reduced, which cannot conveniently be referred unto the former sorts. So there is a Fountain in Portugal termed Cadina, devouring all that is cast into it: Also in times past there was another near to it, rejecting all things cast into it; but this latter is obstructed. In Andalusia, not far from the City Guadiana, Eusebius Nierenburgius relateth, that there is a Lake which sheweth the Seasons or Tempest; for when that this is approaching, it maketh an horrible noise, which is oftentimes heard for the space of 18 or 20 miles. In Calice in France is a Well, into which if that a Stone is cast in, a noise will be heard like Thunder in the cavities of the Well. In the Alpes are Wells, whose water being drank off, contracteth swellings of a great bigness hanging from their necks. In the Kingdom of Granada, at the Town Antiquarius, is a Fountain of so great force, that it dissolveth stones.

Near

Near unto Tours in France are Caves to be seen, termed commonly Les Caves Gouttieres, from the roof of which the water which falleth is formed into divers shapes, as Nuts, Almonds, and the like.

The hot Fountain of Japan burneth all things, and devoureth cloth, iron, flesh, &c. The studious may collect divers other examples from other Authors, and reduce them to this Classis, if that they seem not possible to be reduced to any of the former. The Causes must be sought from the peculiar situation and property of each place.

Proposition XVIII.

To enumerate those Fountains which break forth at a set time, not continually; to explain the cause, and those which ebb and flow.

This Proposition belongeth not to this Chapter, but to the preceding; yet because it belongeth to the wonder of waters, and was neglected in the former Chapter, here it shall be explained.

In a Fountain situated on the top of an high Hill, in the Province of Canaugh in Ireland, the water ebberh and floweth every day with the flux and reflux of the Sea; yet the water is fresh. The same is observed in the Fountain Louzara, which is in the mountainous places of Galecia, called Cabreti, 20 miles from the Sea. Also in Aquitain, in the Village Marsacus, is a Fountain which imitateth the swelling of the Sea, and swelleth with the increase of Garumnæ in Burdeaux. Elsewhere there are said to be Fountains which augment and decrease contrary to the swelling of the Sea.

In Wales, near the mouth of the River Severn, is a Pool called Linlignua, which swalloweth in the Marine floods, whilst that they arise, but it is by no means filled with the same; and the flood of the Sea ceasing, then it riseth with a great force, and vomiteth out the water, with which it covereth the Banks.

In Biscay there are the four Springs Tamarici, whereof three every day are so dried twelve times, as if that no water were in them, as Pliny reporteth: But I question whether they be to be found at this day.

In Savoy is a Fountain of noted magnitude, called Wonderful, which sinketh low twice in an hour; and twice floweth; and before that it floweth, and doth break forth with a great noise, it floweth into the Lake Burgites.

In the Mountains of Foix in Languedoc riseth the River Lers, which in the Months June, July, and August ebberh and floweth 24 times in a day.

In a Region of Westphalia, called Paderborn, is a Fountain which ebberh and floweth twice every day, although it sendeth forth so much water, that not far from the Fountain the water driveth four Water-mills; and it breaketh forth with a mighty noise.

In the Province of Wallis in Germany is a Fountain, called the Fountain of St. Mary; it ceaseth to flow in the Autumn at the day dedicated to St. Mary, and returneth in May.

The Pool or Lake Maron in Palestine is so dry in the Summer, and bringeth forth Herbs and Shrubs so high, that Lions, Wolves, and other wild Beasts do abide there.

In Spain, two miles from Valindolid, is a Fountain which ariseth in May, and falleth in November.

All Baths flow without any cessation or change, except those that are in Rhatia, and are called the Pepper Baths: for they flow only in the Summer, from the third of May to the fourteenth of September, then they cease.

Of Fountains which break forth at a set time, not continually.

See Burtin.

CHAP. XVIII.

Of the Mutation of the places of the Water and Land, or of the Mutation of the watery Superficies into the earthy, and the contrary.

Proposition I.

To know the Superficies of the Earth, which the water possesseth, how great it is, and that which the Earth occupieth.

Of the Superficies of the earth, which the water possesseth.

WE cannot accurately know this, because we are ignorant whether the Sea or Land doth possess the Superficies of the North or South Polar Land. Moreover, because the Superficies of the water, as also of the land, is terminated on the Globe by an irregular bending of the lines, therefore it would be a very difficult task to compute the quantity of the Superficies of the water and land; but as far as we are able to collect in gross from the inspection of the Terrestrial Globe, the Superficies of the water and land seem almost equal, so that the Superficies of the water is half to the Superficies of the land, and so also is the Superficies of the land.

Proposition II.

The Superficies of the Water, as also of the Land, is not at all times of the same magnitude, but sometimes greater, and sometimes lesser; and when the Superficies of the Water is augmented, the Superficies of the Land is diminished.

For the Sea overfloweth sometimes here, sometimes there, or taketh away and carrieth with it: so therefore his Superficies is augmented more or less, as it hath overflowed a great or less tract of Land, as in times past it did in Thessaly. Yet this variety, as far as it is yet known, hath a very little proportion unto the whole Superficies of the water: it may be made great, as we shall shew in the eighteenth Proposition.

Proposition III.

To compute what quantity of Water the Earth containeth, and what quantity of Land.

Of the quantity of Land and Water which the Earth containeth.

For the finding out the accurate and true quantity of water and land, first we ought to know both the whole Superficies of the water, as also its depth in divers parts of the Sea: also the subterraneous heaps of water ought to be examined. All which, seeing that we cannot find out by any method, therefore we cannot find out the accurate quantity of the water or Land; but only from certain Hypotheses, viz. we laid down the Superficies of the water to be half the Superficies of the earth; the profundity to be a quarter or half a mile: neither do we reckon the waters in subterraneous Channels.

The quantity of water may be thus found out: Take a quarter, or half a mile from the Semidiameter of the earth, and the solidity of the Sphere may be found, whose Semidiameter is equal to the residue; let this solidity be taken from the solidity of the earth; the half of the residue is the quantity of the water: the same half subtracted from the solidity of the whole earth, leaveth the quantity of the earth, unto which must be added a fourth or fifth part of the bulk of water, or of the former half. But these are uncertainties from supposed uncertainties, or at least nigh unto truth.

Pro-

Proposition IV.

The Water may leave the shoar and place of the Earth which it doth occupy, for divers causes, so that the Land may appear dry, where the Water or Sea was before, and so a new Land may seem to be generated.

There are a sevenfold Tract of waters, viz. 1. the Ocean, 2. Gulphs or Bays of the Ocean, 3. Streights, 4. Rivers, 5. Lakes, 6. Pools, and 7. Marishes.

A Sevenfold Tract of Waters.

1. Marishes may be excicated or drained either by subduction of the water, or by excication of the earth, as none can doubt; for in many Regions the Soil is fruitful where there were Marishes some years since, as in Westphalia, Gelderland, Brabant, Holland, Muscovia.

2. The same is the account of Pools, seeing that they differ not much from Marishes.

Proposition V.

Rivers leave their Channel or Shoar, (that is, part of their Channel) and afford new Land.

1. If that they carry much Terrestrial matter, Sand, or Gravel with them, which sinketh to the bottom, in progress of they time so augment the Altitude of the Channel, that it is no more depressed than that place from whence the water floweth from the vicine earth; but if that that matter sinketh into one place in part of the Channel, it will separate one part, which then at length will be dried up.

Rivers quit their Shoar, and afford new Land.

2. If that the River take another Channel, whether it be done by Art or Nature, and a violent cause, as by Wind, Inundation, or the like.

3. If the Springs of the Rivers be obstructed, or cease to send forth water, the earth being fallen in or condensed, or a great quantity of Sand being driven by the winds into the Fountains or adjacent places.

Examples of Rivers whose Channels are excicated at this time, either in whole, or in part, are every where obvious in Writers, yet not of great Rivers, but of small, or of the parts of any great Rivers: So a Channel of an Arm of the Rhine, which flowing by Leyden, flowed in times past into the German Ocean, now for some Ages deserted by the water, at this day is land, the Rhine stagnating between Leyden and the Vicus Cattorum.

The Shoars are uncovered from the waters of Rivers, and that some Rivers run in a more narrow Channel than they did formerly, is manifest from many examples, and from thence that some at this day are not Navigable, which formerly were, may easily be collected; the Altitude of the water being diminished, and none at all to be left in their Channel, at some time or other, as in the River Scaldis: Therefore Governours of Commonwealths have a great care that the Mud and Sediments be drawn from out the Channels of Rivers, that they may remain navigable, as is seen in many places.

But great Rivers cannot be dried up or changed into land, except in many ages, because that many lesser Rivers flowing from divers parts, make them; (of which though some may be dried up, or change their course, yet all do not suffer the same, except in a long space of time) and the Channel is deeper. But one heap or ridge of Sand may cause the River to run through another Channel, and the former to be dried up, yet it taketh not away the River, except the Fountains or Branches of it be obstructed: Therefore it is true, that neither the Nile, Tanais, Albis, or the Rhine, or other Rivers, always flowed, or shall perpetually flow, but that there was earth before, and shall be afterwards where they now flow.

V 2

Pro-

Proposition VI.

Lakes are dried up and changed into Land.

Lakes dried
up and chang-
ed into Land.

1. If that a *Lake* be constituted from *Rivers* that flow in, that mutation is made by the abduction, withdrawing, or cessation of the *River*, and also by evaporation.

2. If that a *Lake* receiveth waters by a *subterraneous* passage from the *Ocean* or *Sea*, there will be a mutation of that *Lake* after that those *subterraneous* passages are obstructed; and so *Lakes* are first changed into *standing Pools* and *Marishes*, then at length into dry *Land*. It is evident, saith *Aristotle*, that because a force of waters hath brought in Mud, or something of that sort, (he speaketh of *Lakes* made of *Rivers*) therefore *standing Pools* are made, and the earth is dry, and that their water being left and standing, in succession of time it is exsiccated, and altogether vanisheth. So the *Lands* that touch upon the *Lake Maotis*, by the Soil brought down by the *Rivers*, are increased so much, that *Ships* now, far less then those about 60 years since, for *traffic* sake, enter into it. There are many examples found of small *Lakes* changed into dry *Land*, especially in *Holland*.

Proposition VII.

Streights are exsiccated and changed into Isthmuses or Continents.

Streights

That happeneth, when that by reason of the continual sinking of the *Terrestrial* matter made in a long time, the channel of the *Streight* is become so high, that it denieth a passage to the *Sea*.

So it is very probable that the *Isthmus* between *Africa* and *Asia*, was a *Streight*, by which the *Mediterranean* and *Red-sea* were conjoynd, as we shall shew in the following *Proposition*. In many *Streights* at this day, the *Altitude* of the *Sea*, and the *Altitude* of the *Channel* is found lesser than in former time; which is a certain token that those *Streights* shall have no water in them in the time to come, and shall be changed into a dry *Isthmus*. So the *Streight* through which the *Atlantick Ocean* maketh a *Gulph*, which the *Hollanders* called *Snyder-zee*, and the *Texell*, at this day receiveth no larger landing *Ships*, and the depth of the *Sea* is every year found lesser, and the *Land* higher; therefore where the water is at the *Texell*, there, after some Ages, will be dry *Land*. Concerning the *Olier*, the same in time to come will also happen.

Proposition VIII.

The Bays or Gulphs which the Ocean maketh between the Mid-lands, in course of time do become dry places.

Bays or Gulphs
in time do be-
come dry
Land.

This is done by a double cause; 1. If that the *Streight*, by which the *Bay* is conjoynd to the *Ocean*, becometh an *Isthmus*, or else be stopped by *Sand* and *Gravel*, which is done in progress of time, as we have said in the preceding *Proposition*: For by this cause the *Bay* of the *Ocean*, and a part or member of it shall be cut off from the body, and shall become a *Lake*; and then a *standing Pool* and *Marish*, and by exsiccation become earth, and no water shall be seen there.

2. If that the very *Channel* of the *Bay* become higher by reason of the *Rivers* flowing into it, and carrying *Sand* along with it, that it in time cannot receive the *Sea*; so by degrees the *Sea* will recede from the shoars of that *Bay*.

Therefore the *Mediterranean*, the *Baltick*, the *Red*, *Persian*, and other *Seas* that are *Bays* of the *Ocean*, will cease in time to be *Seas*, and will be changed into *Lands*, which shall be fully proved in the following *Proposition*.

Pro-

Proposition IX.

The Ocean forsaketh some Shoars or Coasts, so that it becometh Land, where the Ocean formerly was.

That happeneth for these causes; 1. If that the force of water be broken at the shoars by *Rocks*, here and there on the *Coasts* or *Ciffs* in the *Sea*: for that force being broken, the *Terrestrial* parts of the water subside and still; and augment the *Altitude* of the banks of *Sand*; whence it cometh to pass, that the *impetus* of the *Ocean* is more and more broken, and therefore more *Terrestrial* matter sublideth: so that the *ridges* being augmented, they exclude the *Ocean*, or make the *Channel* more shallow. 2. It conduceth much to the Augmentation of the shoars, if that the shoars be sandy and stony, that the *Ocean* running by, can separate or take away little with it: so that when it can take away nothing, it always leaveth some particles, that in progress of time the shoars become more high, and force or stop the *Ocean* from its accustomed places. 3. If that another adjacent shoar hath less solid Earth, that is light and full of *Caverns*: for the *Ocean* carrieth the dissolved and broken parts of *Earth* to the vicine shoars. 4. If that great *Rivers* discharge themselves by the shoar into that *Sea*: for these *Rivers* carrying with them much *Sand* and *Mud*, or *Gravel*, when that they arrive to the mouth and shoar, where they endeavour to exonerate themselves into the *Sea*, they leave it, partly because the *Channel* is there more broad, and partly, because that the *Sea* resisteth the flux of them: and this is chiefly observed in *Regions*, which *Rivers* overflow every year. 5. If that frequent *Winds* blow from the *Sea* to the shoar, and the shoar be rocky and firm, not sandy. 6. If that the flux of the *Sea* be swift and vehement, and the reflux slow and gentle; for the gentle reflux taketh not away the matter that the swift flux brought, but suffereth it to sink. If that the shoar descendeth obliquely into the *Sea* for a long space, and bend not down directly and perpendicularly: for so the violence of the *Sea* decreaseth, and leaveth the matter behind.

There are many places of the *Earth*, which it is evident were formerly taken up by the *Ocean*. Where *Egypt* is, in time past was the *Sea*, as is proved by the testimony of the *Ancients*, and by Experience at this day: For the *Nile* flowing from the remote *Regions* of *Aethiopia*, and every year entering the *Channel*, where it swelleth, it expandeth it self through all *Egypt*, where, when the force of the *River* ceaseth, the *Mud* sinketh, and also the *Terrestrial* matter, which the swift course of the *River* brought in; and so *Egypt* becometh higher. And before that so much matter was brought in by the *Nile*, then the *Sea* covered the *Land* of *Egypt*; but now the *Sea* is not admitted, by reason of the height. Of this, *Aristotle* and Others are *Witnesses*; his words are these, *This place, and the whole Region of Egypt, which was only made by the River, seemeth always to become more dry; and because that the Marshes by degrees drying up the adjacent places, began to be inhabited, the length of time obliterated the beginning of it; therefore all the mouths of the Nile, except that of Canopus, seem to be made by the Industry of Man, and not by the River.* Moreover, all *Egypt* anciently consisted of a City called *Thebes*, as is very manifest; which *Homer* also declareth, who flourished (as I have said) after this Mutation: For he maketh mention of that place, as if that *Memphis* as yet had no Being, or at least not so big. *Seneca* here explaineth it more clearly: *All Egypt, saith he, is made up of Mud; for (if that we may credit Homer) Pharos was so far from the Continent, as that a Ship with a full spread Sail could hardly measure or encompass it in an whole day; but it is now adjoined to the Continent: for the Nile flowing muddy and troubled, and drawing much Mud with it, and so adding to it the former Lands, hath made Egypt larger by an Annual increase. Hence the soil is muddy and fat, neither hath it any Intervals in it, but hath increased to a solidity.*

Ganges,

Where the O-
cean formerly
was, is now
Land, by its
forsaking the
shoars.

The Land of
Egypt, caused
by the Nile.

The Rivers
Ganges and
Indus, by their
Inundations,
both cause al-
to Land.

Ganges, and *Indus* in *India*, both famous Rivers, have caused the same by their Inundations that the *Nile* hath; also *Rio de la Plata* in *Brazil*. And it is probable, that *China* was generated, or at least augmented after the same mode, by reason that a violent River, which they call the *Yellow River*, flowing from *Tartary* into *China*, often overflowing (although not in an Anniversary time,) hath so much *Sand* and *Gravel*, that it maketh the third part of its water.

These Examples demonstrate the cause laid down in the fourth place, viz. why Rivers should cause the Sea to forsake the *Shoar*: but the Sea it self is also oftentimes the cause of its departure in divers Regions, viz. whilst that it carrieth and layeth down the matter, by which the *Channel* and *Shoar* acquire the greater Altitude, and admit not the approach of the Sea: so *Holland*, *Zeland*, and *Gelderland* were made; for that the *Ocean* in time past possessed these Countries, is known both from Ancient Histories or Monuments, as also from the quality of the Soil it self. The shells of *Fishes*, found on the Cliffs or higher parts of *Gelderland*, not far from *Noviomagus*, do sufficiently testify the same; as also *strubs* and *cuzey* matter found in the profundity of the soil: Add, that the Sea is higher than the Land of these Regions, and hath overflowed it, and would cover it again, if that it were not obstructed by banks of *Sands* and *Ramparts*. Yet there are some that say, they suppose that *Holland* and *Zeland* were brought from the *Rhine* and the *Mosa*; which is not improbable.

Proposition X.

To shew the Generation of Sandy-banks in the Sea, and elsewhere.

The generati-
on of Sandy
banks.

We term those banks of *Sand*, that are elevated above the *Channel* of the River to that height, that they hinder the passage of Ships. Neither do they differ from *Rocks*, but that their parts do cohere and are condensed; but the *Sand-banks* do not consist of parts very coherent. But these words are oftentimes confounded.

The *Sand-banks* do either lie in the *Channels* of Rivers, (as many are in the *Volga*, and the *Albis*;) or at the mouths of Rivers, (which is frequent, as in the *Volga*, and the *Albis*;) or on the *Sea-shoar*, or amidst *Seas*. The mode of the generation is the same, by which we have said in the foregoing Propositions, that the *Channels* of Rivers are dried, and the *Sea* forsaketh the *shoar*; for so oftentimes it cometh to pass, that the *Ocean*, before that it leaveth part of the *Earth* altogether, first generateth this ridge of *Sand* not far from the *shoar*, and so by degrees retreateth back, and these banks become parts of the *Continent*. After the same mode it hapneth in the *Channels* of Rivers, before that they are wholly dried and forsaken by the water. The most frequent cause is, when Rivers are augmented by rain, or dissolved snow, and so run violently; for then where their motion is more vehement, and *Channel* more narrow, they eat off the mud and sand from the shoars or some banks; also the substance of the bottom is advanced and lifted up, and is carried by the impetuosity of the River, until it come to a more large and ample *Channel*, and be removed from the Fountain or cause of abundancy of water; for here the vehemency of the motion is remis, and then the *Terrestrial parts* subside, and *Sand-banks* are generated: of which, many are found in places where there are broad Rivers, but none almost in narrow.

Neither is there any mischief, which taketh away more splendor from the most flourishing and rich *Empories* or places of trade, without any hope of recovery, or bringeth greater detriment to Ships. That we may pass over those Ancient Cities, now for many Ages buried in oblivion, we have Examples before our eyes of *Stavoren* in *Friesland*, *Armuych* in *Zeland*, of *Dort* in *Holland*, *Antwerp* in *Brabant*, and *Stade* in the Bishoprick of *Bremen*.

Nothing took away the power of Traffick from these Cities, (which was the cause of all their splendor and riches) but the banks of *Sand* arising in their Rivers, or the Neighbouring Seas.

Neither

Neither is there almost any *Empory* that is Maritimate, that is free from the fear of these *Sand-banks*. Those that are in the *Albis* or the *Elbe*, have destroyed many *Hamburgian* Ships, that have escaped the grand storms of the *Ocean*. The same is manifest in others, to him that considereth, especially in the *Texel* and *Ulie* of *Amsterdam*.

They are discovered in a great number on the *Sea-coasts* of *Flanders* and *Friesland*, and the suff of the Sea going down, many of them are discovered to be part of the *Continent*; for the *Chantiel* interceeding hath then little water, and admitteth of no sailing. The famous, or rather infamous amongst *Mariners*, by reason of *Shipwreck*, are those that are found in a great number in one part or place of the Sea. They are these; 1. The *Sand-banks* of *Brazil*, *Abrolhos de Brasilia*, *Hesriff van Brasilia*, also *de Droogte van Brasilia*. They lie from the Coast of *Brazil* for the space of 70 miles, which the *Mariners* that sail to the *Indies*, ought to avoid with great diligence, whilst that to shun the calm of *Guinea*, they sail towards *Brazil*: yet they come as near to those *Sands* as they may, that they may have the greater Wind; but they must be cautious, that they be not carried between *Brazil* and the *Sands*. 2. The *Sands* of *St. Ann*, not far from *Guinea*, six degrees at the elevation of the *North Pole*. Ships being carried upon these, come not off without great danger and labour, and are detained for many daies, when that *Seamen* suppose that they have passed beyond them: For these *Sands* are not continual, but they are disjoyned by broad and deep *Whirlpits* or *Gulphs*; so that in a small distance, here is a depth of about eight fathoms, by and by about two. 3. The *Sands* between the Isle of *Madagascar* and *Arabia*, called *Baxos de India*; they are sharp *Rocks* of *Coral* of divers Colours. 4. The *Sands* of *China*. 5. The *Sands* of *Flanders*. But more may be seen in *Geographical Sea-charts*. We have declared one mode of the generation, by which these *sands* have an Original, by sinking of the *Sandy* matter, which the Sea carrieth with it. The second mode to be adjoyned to this is, by which such *Sands* can, or may have a Being; to wit, if that the Sea overflow the *Earth*, in which the hills and risings are sandy, (for then those hills are, or shall be called, *Sand-hills*;) they are discovered in a large tract; but the Land it self is more low.

If therefore the Sea by an irruption, should inundate and cover those *Lands*, then those *Hills* would be *Sand-banks*: so we must judge of others.

Therefore at the Mouths of Rivers, *Sand-banks* are most frequent, because the *Channel* is there broader, and therefore the impetus of the efflux of Rivers is there diminished; and therefore the matter sinketh, which the violent Flood brought with it: Also the waves of the *Ocean* repel the Waters flowing from the Mouths of the Rivers, whence all the force ceaseth.

And it is worth our labour to distinguish, and consider these two modes of the generation of *Sand-banks*.

Proposition XI.

To conjecture, whether the Sand-hills, which lye in the Sea, not far from the Continent, shall be part of this future Continent.

We have said in the former Proposition, that these *Sand-banks* are generated two manner of ways; one truly by the subsidence or sinking of the *Sand* into the Sea, the other by denomination, viz. all *Hill*, the water encompassing and overflowing the *Earth*. If that they are generated by the former mode, and are found to increase more and more, it is a sign that they will joyn to the *Continent* of the *Earth*; that is to say, that the *Channel* of the Sea will be dried between these *Sand-banks* and the adjacent Land; But if that the *Sand-banks* are generated after the second mode, then we may conjecture, that those *Sand-banks* will not so easily be conjoyned to the adjacent *Earth*; but that the Sea rather will farther overspread the Land.

Proposition

Of Sand-banks
or Hills in the
Sea, not far
from the Land.

Proposition XII.

Islands are produced in the Sea and Rivers after the same mode that Sand-banks are; yea Islands may proceed from Sand-banks, yet they are also made after another mode.

Of the generation of Islands.

For if that in any part of the Sea, so great a quantity of *Sand, Gravel, Mud, and Onze*, be aggregated in progress of time, that it becometh higher than the Sea, it will become an *Island*; which is the first Mode. Then by the second mode, If that the Sea breaking into the Land, overfloweth only the lower parts, but not the higher, and the *Hills*, those will be *Islands*. And by this latter Mode it is probable, that those *Islands* were generated, or had original, which arise to an huge *Altitude*; as *St. Helena, Ascension*, and the like; especially those which are *rocky and stony*.

Sicilia separated from Italy by the Sea.

Hitherto appertain *Islands*, which the Sea hath cut off from the prominent Lands: So *Writers* testify, and the *Poets Verses* are known, that *Sicilia* was separated from *Italy* by the violence of the Sea.

By the first Mode, *viz.* the subsidency and congregation of many *Terrestrial particles*, the *Islands of Zealand, Denmark, and Japan*, had their original. The same seemeth to have been the original of the *Molucco Isles*: for if that you dig on the Plain to a small depth, you shall meet with an abundance of *Sand and shells*.

Other Isles separated from the Continent by the Sea.

The *Inhabitants of Ceiland* relate, that the *Isle* was separated from the procurment of *India*, and it is very probable so. The *Isle of Sumatra* is supposed formerly to have been united to *Malacca*.

The *Isles of the Maldives* in times past was were said to adhere to *India*, and were a continuous Continent; yet at this day they are far in the Sea, and divided into an innumerable many *Isles*, (esteemed about 1100,) neither ought we to doubt of it, seeing that narrow *Euripuses* pass through every two of these *Maldivian Isles*, so that in some places they exceed not four or five Ells; but in progress of time many of them unite into one, the *Euripus* being diminished, and all of them at length will conjoin in one oblong *Island*. Yea all the *Oriental Isles*, situate between the Continent of *Asia* and the Land of *Magellan* in a great number, seem to arise from the violence of the *Ocean*, the Land being separated: For the *Pacifick Ocean*, in the *Torrid Zone*, is moved by a perpetual motion and force from the West to the East, that is, from *America* to those *Oriental Isles*: Moreover, a perpetual *Wind* greatly augmenteth the violence of the *Ocean* towards that *Oriental quarter*. Therefore it is not improbable, seeing that all these *Islands* are in the *Torrid Zone*, but that *Asia* formerly did adhere to the *South-land*, or that of *Magellan*, in a continual tract of Land: then at length the violence of the *Ocean* eat off, and separated sometimes here and sometimes there, until that a way being made on every side, it was conjoined to the *Indian Ocean*, and made so many *Islands*, as that we stand amazed at this day, in that quarter being distant a very small space, *Java, Celebes, Borneo, Madera, Amboina, &c.*

Concerning the *Islands* in the Gulph of *Mexico*, as also in the Streights of *Malacca* we conjecture altogether the same.

The *Isles of the Aegean Sea*, whether they had a Being from the divulsion made by or from the Sea (the Sea flowing from the *Euxine Sea*, and the *Mediterranean* raising up of contrary floods,) or after the former mode, by a subsidency of the *Terrestrial matter*, which the *Propontis* had carried from the *Euxine Sea*, as yet I doubt: It is more probable, that a divulsion was made; and peradventure that famous Inundation of *Deucalion*, here also exercised its force. It is certain, that the *Isle Euboea*, at this day called *Negropont*, did formerly adhere to *Greece*, as Authors of no mean Credit do relate; for so small an *Euripus* interfloweth, that it may be joynted by a Bridge.

We

We shall shew, that *Islands* may be made of *Sand-banks* by many Examples: So the *Islands* in the River *Nile*, and in the River of *St. Lawrence*, were formerly *Sand-banks*. *Rivers* make *Islands* after another manner, when that they send forth a branch, which they receive into themselves in another place, as may be seen in the *Volga, Tanais*, and other places. That this was not done by Nature, but by the Industry of Man, we ought not to question: the River *Ob* doth the same.

These two Rivers, *Rengo* and *Coanza*, made the *Isle Loanda*, situated on the Coast of *Africa*, which exonerated themselves into the Sea in that place; by reason that they bring great store of *Mud* and *Rubbish* with them, they falling with an exceeding force from Mountainous places, so that they left this, and as yet the same in their Inlets, and so in course of time made the *Island Landu*; first made a *Sand-bank*, now most fertile and likewise populous: And so we suppose that many *Sand-banks* formerly made the *Islands*, situated at the Coasts; although that some were also caused by a divulsion made by the Sea, as *Norway*. And it is more probable, that this is the mode of generation of *Islands* in stony and rocky Isles: But in the *Indian Sea*, *Islands* may have an original both by divulsion and subsidence; or sinking of matter; because that whilst it forceth away, it also eateth between the middle of the *Earth*, which at length it putteth in another place; unto this many furious *Winds*, which are very frequent in the *Pluvial months* from *May* to *September*, do much conduce: For by these the Sea is mightily troubled, so that the *Sand* and *gravel* is separated from its bottom, and from other Regions, which matter is forced on the Coasts of *India*. So the Mouths of the Port of *Goa*, by the violence of the *Winter-winds* (from *May* to *September*) are so obstructed with congested heaps of *Sand*, that they hardly afford a passage to smaller *Vessels*. So these heaps of *Sand* shut up the Port of *Cocin*, on those Months, so that neither small nor great *Vessels* can pass.

For a continual *Rain* on the Mountain *Gates*, and a frequent *Ecnephias* or impetuous wind from a *Cloud* breaking forth with an abundance of *water* from the *Clouds*, which are beheld to hang as it were on the top of *Gates*, send forth such an abundance of *water*, and with that violence, that it carrieth much *Sand* with it to the *shoar*, where the *Ocean* resisteth; which *Sand*, when that the *Winter* endeth, is taken away by the *Ocean*, and the *Ports* are opened.

There are some *Lands* so high the *shoar*, that the flux of the Sea doth make them *Islands*, and in the reflux they are in appearance part of the Continent; and if that the interposed Channel acquire a greater *Altitude* in progress of time, at length the flux of *water* is excluded, and the *Islands* become part of the Continent without reciprocal mutation.

And also the *Nile* overflowing *Aegypt* every year, causeth the *Cities* and *Hills* of *Aegypt* then to seem *Islands*: So the River *Volga* doth so increase in the Months of *May* and *June*, that it covereth the *Sands* and *Islands*, and many of the *Isles* that adjoin unto *India* become *Sands* in the *Pluvial Months*, where that the *Nile* and the *Ganges* do overflow the *Regions*.

Proposition XIII.

There is yet another Mode, besides the two already related, by which Islands have a Being or Original; viz. for the coherent Earth suddenly to be carried from the bottom of the Sea to the superficies.

Others suppose this Mode, and that not undeservedly, to have proceeded from the fabulous *Greeks* and *Poets*: But *Seneca* a grave Author relateth, that the *Island Thracia* in his time sprang up in the *Aegean Sea*, whilst that the *Mariners* looked on. Although therefore that very few Examples of such productions of *Islands* are to be found, yet it ought not to be supposed impossible; for it may be, that a *porous, spongy, sulphureous Earth* doth exist (as there is a various difference and mixture of light *Earths*;) which even now hath increased to a notable altitude, yet so, as that it yet remaineth beneath the superficies.

Another Mode by which Islands have an Original.

superficies of the water. Now, if that such a *Sand* or *Earth* adhere, lets firm at the bottom of the *Sea*, it may be separated by the violence of the *Sea*, because that it is little lighter than the *water*, or almost of the same levity, therefore it will ascend to the *superficies of the water*; and suddenly an *Island* will seem to spring up: or a *Spirit* or *Wind* included in the bowels of the *Earth*, without any violence of the *Sea*, and endeavouring to break forth, may send forth such an *Island* above the *Water*: for great is the force of *Winds* included in the *Earth*, and requiring a larger space, as is evident from *Earthquakes*. By which it is manifest, that sometimes *Mountains* are sent forth of the *Earth*, and sometimes swallowed up: the same is manifest from *Warlike Mines*, where the *Wind* breaketh up great *Towers* and *Walls* and carrieth them into the *Air*.

If that therefore such an *Island* of a sudden springing in the *Sea* adhere to the bottom of the *Sea*, we must necessarily say, that it was forced upwards by the violence of some *subterraneous Wind*: As some write, that *Mountains* sometimes are thrust forth of the *Earth*; but if that it no longer adhere to the bottom, as well the *Wind*, as the violence of the *water*, may separate it from the bottom; so that at length, by its own levity, it is carried upwards to the *superficies*.

Proposition XIV.

Whence another doubt doth arise, *viz.* whether that there be certain *Islands* that swim on the *Sea*, as *Thales* supposed the whole *Earth* to swim on the *Ocean*? For the Opinion of *Thales* it is sufficiently refuted, seeing that the *Channel* of the *Sea* is found continuous to the *Land*: but reason persuades us, that there may be *swimming Islands*, if that the *Land* be light and *sulphureous*. *Seneca* addeth Experience; for he saith, that he saw the *Isle* *Catylas* swimming, which had *Trees*, and brought forth *Grass* and *Herbs*; that the *water* sustained it; and that it was not only driven hither and thither by the *Wind*, but also by the *Air*; and that it continued not in one station either by *Day* or by *Night*. Moreover there was another *Island* in the *Lake* *Vadimon*: another in the *Lake* *Station*. So the *Ancients* relate, that *Delos* and all the *Cyclades* formerly swam in the *Sea*. Neither may you object, why do not those *Islands* swim at this day? For unto this the Answer is easie, That such a *swimming* cannot continue long; for seeing that those *Islands* almost touch at the bottom of the *Sea*, whilst that they are moved hither and thither, they are carried more or less elevated to the *Sands* or *Channels*, especially if that they come in the midst between two *Sands*, that motion is stopped, and other collected *Earths* are united with this *Sand-bank* or *Channel*, and so of *swimming Islands* they become firm. In *Fondura*, a Country in *America*, at this day is a *Lake* in which are many *Hills*, which are moved to and fro with the *wind*.

In the great *Lake* of *Scotland*, called *Loumond*, is an *Isle* that swimeth, and is moved about, although that it be apt for Pasturage, as *Roetius* writeth.

Hitherto we have treated of the generation of the *Lands*, or of the *Acid* part of the *Earth* that is extant on the *superficies*: we shall now consider how the *Ocean* and *Waters* may change their places, and possess new.

Proposition XV.

Rivers possess certain tracts of *Land*, which they possessed not before, and that for divers reasons.

1. When that they first arise from their *Fountains*, and receive a *Channel* either from *Nature* or by *Art*, of which we have spoken in the fifteenth Chapter.

2. If that a *River*, maketh another *Channel* for it self, or sendeth forth a branch from it self, which is most commonly done by men, *viz.* that they may bring part of the *Rivers* unto *Cities*, or into another *River*; Examples of which we have alledged in the forecited Chapter.

3. If

3. If that *Rivers* more and more possess the *banks* in progress of time, which hapneth, 1. If that the *Channel* become higher from the sinking down of the *Earth* or *Sand*. 2. If that it eateth off the sides of the *Bank* by its swift course. 3. If that it be augmented by another *River*, and by an abundance of *Rain*, or an *Exhydria* or impetuous *wind*, accompanied with a mighty fall of *water*.

4. If that they overflow the *Earth*, which if not going back again, but do more and more augment, they become *Lakes*; or if they return to their *Ancient Channel*, the *water* being effused into the *Fields*, becometh a *Marsh*, if that there be great abundance of it.

Corollary. It is probable therefore then, that there was a time in which those tracts of *Land*, which now the *Rhine*, *Elbe*, and the *Nile* possess; as also other *Rivers*, were dry, and possessed by the *Earth*.

Proposition XVI.

Lakes, *Marishes*, and *standing-Pools*, occupy parts of the *Earth* that before they possessed not.

1. When that they first spring up, and are augmented in progress of time; of which we have spoken in the fifteenth Chapter.

2. If that abundance of *Rain* fall.

3. If that *Rivers* bring store of *water* with force into the *Lakes*.

4. If that the *Channel* become more high.

5. If that the *Lakes* being agitated by often and more vehement *floods*, by degrees do more eat the *banks* and cover the *land* with *water*. So the *Lake* of *Harlem* within thirty or forty years, hath extended beyond its former *Bank*, about the space of the twentieth part of a *mile*.

Corollary. Therefore it is probable, that there was a time when those tracts of *land*, which now the *Lake* *Zaire*, *Lemanus*, *Parina*, *Harlem*, *Meotis*, or the *Marishes* of *Westphalia*, and all others formerly possessed, were dry *Lands*.

Proposition XVII.

The *Ocean* possesseth part of the *Land*, which formerly it did not possess.

This hapneth after various manners; 1. When that breaking through the middle of the *land* it maketh *Streights* and *Gulphs*; as the *Mediterranean*, the *Arabian*, that of *Bengala*, *Camboja*, and such like: So the *Streight* between *Sicily* and *Italy*; between *Ceilan* and *India*, between *Greece* and *Eubæja*, between *Manilla* and *Magellan*, and also the *Danish*, &c. Neither is it improbable, but that the *Atlantic Ocean* was so generated, and that *America* was so divided from the *Old World*, or at least from *Europe*, which some do the more easily embrace, that they may thence only deduct the *Original* of the *American Nations* from *Adam*. Indeed the *Aegyptian Priests* related unto *Solon*, about six hundred years before *Christ*, (as you may see in the Dialogue of *Plato*, termed *Timons*,) that there was formerly opposite to the *Herculean Streight* of *Gibraltar*, an *Isle* bigger than *Asia* and *Europe* together, called *Atlantis*, and that part of it afterwards by a great *Earthquake*, and a great deluge of one day and one night, was swallowed up in the *Ocean*. From which Narration we may collect, that in former times amongst the *Aegyptians* there was a fame, especially amongst those that were Learned, of the separation of *America* from our *World*, made many Ages before. But it is far more likely, that the North part of *America*, in which is *New France*, *New England*, *Canada*, and the like, did in former Ages adhere to *Ireland*. The *Ancients* write, that the *Streights* of *Gibraltar* were dug through by *Hercules*.

2. When with a violent *Wind* the *Ocean* is forced, and overfloweth the *land* by breaking through, or over the *banks* that are made by *Nature* and *Art*. There are many Examples of the *Inundations* of the *Ocean*; as formerly in *Theffuly*, and not long since in *Friezland* and *Holsatia*.

X 2

3. When

Certain tracts of *Land* which *Rivers* possess, which they possessed not before.

Land possessed by the *Ocean*, which formerly it did not possess.

3. When by reason of the same causes, it penetrateth the firm *Land*, and maketh *Islands*. By this Mode we have said in the former *Propositions*, that it is likely that that *Sea* had its original which interfloweth between those innumerable *Oriental Isles*, and that which floweth between the *Maldivian Isles* and *India*, and also between the Gulph of *Bengala* and *Cambaja*.

4. When it by degrees eateth and consumeth the *Coasts* or *Shoars*, and so in progress of time covereth some parts of the *Shoar* and of the adjacent *land*. So the *Baltick Sea* invaded the *Coasts* of *Pometania*, and destroyed the famous Town or Empory of *Vinetam*: so taking away the *Islands* from the *Coast* of *Norway*, it let in it self between these *Isles* and the *Continent*. So the *German Ocean* hath possessed the *shoar* of *Holland*, near the Village of the *Catti*, in a great space of *Land*: so that the Ruins of the *Brittish Tower*, formerly a *Fortress* or *Castle* of the *Romans*, now lieth inconspicuous, being covered with water far from the *shoar* in the *Sea*. The *Ocean* hath taken from the North part of the *Island* of *Ceilan* the space of 20 miles, so that at this day it is far lesser than it was. And there are many more Examples of the like kind.

Corollary. From hence we may collect, that those places of the *Earth*, where now the *Ocean* is, in times past were *Land*; and again shall be *land*, to wit, if that we do suppose, that the *earth* hath continued so many thousand years, and shall yet continue. Concerning this Argument you may consult *Aristotle* in the first Book of his *Meteors*, and the twelfth Chapter; and *Stevinus* in his *Geography*. If that you demand, how the *Ocean* shall occupy the place of *Mountains*, that then the *Mountains* shall not be covered by the *Sea*, but shall then become either *Rocks* or *Islands*, either *water* being forced unto them; that is, confirmed by the example of many *Islands*, yea almost of all; because that Experience testifieth, that almost all *Isles* have *Mountains* in the midst, as *Ceilan*, *Sumatra*, *Java*: furthermore, some are nothing else but *Mountains*, as *St. Helena*, *Ascension*, the *Hesperides*, and the like. Seeing therefore that those places of the *Ocean*, in which these *Isles* lye, in Ages to come shall be, or already have been *land*, then indeed the *Mountains* of these *Isles* shall be *Mountains* of the *Continent*.

Proposition XVIII.

Whether it is possible, that the whole superficies of the *Earth* should become dry, or *Land*? Or, that it should be all liquid or covered with water? That the most parts should be of an *Earthly* superficies at one time more than at another, or that more should be covered with water.

Of the whole Superficies of the *Earth*, whether it may become all *Land* or all *Water*.

1. That sometimes the *land* should possess a greater part of the superficies of the *Earth*, than at another. Also that which is a consequence to the former, that *water* at one time should possess the greater part of the superficies of the *Earth*, more than at another, hath been sufficiently shewed in the second *Proposition* of this Chapter.

2. Whether the *Water* or *Ocean* can cover the whole *Earth*, so that there shall be no *Earth* or *Island* above it, and so cause a Universal flood? Unto this I answer, That a mode may be conceived and explained, by which it may naturally be done; but yet by reason of the compaction of the *Lands*, and *Altitude* of the *Mountains*, it is scarcely probable that any such thing will be. The mode by which it may be done, is the same with that explained in the second *Proposition*: For if that the *Ocean* continually eateth the *land* from the *shoar*, and layeth it down in the profoundest parts of its *Channel*, and do this in a perpetual course of time, then it shall take away all the *Lands* of the superficies, or extant parts, and it self shall cover all the *Earth*. And the *Mountains* shall either be made *Rocks*, or shall by degrees sink and fall, their *Foundations* being consumed by the vehement force of the *water*. But this may be done more easily, if that we will follow their opinion, who attribute a greater height to the *Ocean* than to the *Land*. But we have in the precedent discourse sufficiently confuted that opinion.

3. Whether

3. Whether that the *Land* can so occupy the whole superficies of the *Earth*, so that all the *water* and the whole *Ocean* may be contained in the Caverns of the *Earth*, or in the subterraneous passage, and covered by the *Earth*? Unto this I answer in the same manner, that it is not impossible, and that a Mode may be conceived by which it may be done; but yet scarcely ever shall be. Now there is only one Mode to be conceived, viz: that if now there are or may be so many cavities within the depth of the *earth*, within the which the *Ocean* may be contained: for neither hath it been demonstrated by any, as hitherto, that such cavities are not in the depth of the *earth*; and if they be not, but that they may be done, 1. by the violence of the *earth*, and 2. by subterraneous winds.

Proposition XIX.

Why, in the middle of the *Ocean*, no *Islands* are found, and no abundance of *Isles*, but most at great *Continents*, or great *Islands*?

Of the truth of this Proposition we ought not to doubt, for experience manifestly proveth it. In the midst of the vast *Pacifick Ocean*, between *Africa* and *Brasilia*, besides the *Isle* of *Sancta Helena*, and that of the *Ascension*, few are found: but about the shoars of the *Continent*, or in the *Ocean*, not far from the *Coasts* of the greatest *Continents*, all *Islands* are (those few only excepted which I have spoken of): this may especially be taken notice of in those numerous ones that we rearm troops of *Isles*, which are all near the *Continent*. The troop of the *Isles* of the *Hegean Sea* adjoyneth to *Europe* and *Asia*; the *Hesperides* to *Africa*; the *Maldivian Isles* to *India*; as also all the *Indian Isles* between *Asia* and the *South Continent*; only the *Flandrian Isles*, or *Azores*, seem to be situated in the midst of the *Ocean*, between the old World and *America*, although that they are more near to that than to this.

The cause of this Phenomenon or situation of the *Islands* without doubt is, that they had a Being from the irruption of the *Ocean* into the *Continents*, by which violence the *Lands* of the *Continents* were separated: but because the *Altitude* of the *Ocean* was not so great, that it could cover all the *Lands* intercepted, thence here and there between the *Continents*, and at the *Continents*, troops of *Islands* did arise: also it is likely that some of them were generated by another mode, viz: because the *Ocean* cannot carry the *Lands* separated, and cut off any long space with it, but suffereth them by degrees to subside not a long distance from the *shoars*, which subsidency or sinking continued for many Ages, at length caused *Isles*: therefore in the middle of the *Ocean* are few *Islands*. 1. Because that place is more remote from the *shoar* than that any of the eaten off parts should be carried thither. 2. Because that the commotion and force of the *water* is greater there, which moveth the *earth* of the *Channel*, or rather promoteth the depth, than suffereth *Islands* to be generated there. 3. Because there are no *Continents* there, therefore neither can troops or heaps of *Islands* be according to the first mode, by which we have shewed such heaps of *Isles* to be produced; yet in times past, when that the middle of the *Ocean* was not where 'tis now, it is not unlikely that such *Isles* were here, and by degrees were swallowed by the *Ocean*.

No *Isles* found in the middle of the *Ocean*.

O F



O F

Absolute Geography.

S E C T. V.

Containing an explication of the Atmosphere, and the Winds. In three Chapters.

C H A P. XIX.

Of the Atmosphere and Air.

Proposition I.

From the parts of the Earth, as well dry as moist, or from the Earth and Water, vapours and fumes do continually exhale into that space, which is about the Earth.

Of vapours
and fumes.



THE Cause is twofold: first, the Celestial heat of the *Stars*, especially the *Sun* and *Moon*. The other is a *Terrestrial heat*, or *subterranean* or rather *terrestrial fire*, or which is admixed with the parts of the *earth*: For we see that almost all *bodies*, the least *fire* being moved towards them, send forth a fume. Seeing therefore that both the *Celestial* and *Terrestrial heat* is naught else but a certain *fire*, therefore it is also necessary that vapours and fumes should be advanced by it from the parts of the *earth*. So the truth of the *Proposition* is evidenced *a priori*; Experience also confirmeth the same. For those that travel in the night time, especially when the *Moon* shineth, and that towards the *water*, discover many vapours to wander and be advanced about the Superficies of the *earth*. Also it is vulgarly known, that in the *day* the *Sun* doth raise many *vapours*: also when that a *mist* ariseth upwards, which is a certain token of *rain* to follow,

Pro-

Proposition II.

The Atmosphere is a space about the whole earth, in which the exhalations raised from the earth are, always present, And it is uncertain whether that anything or body else be contained in it besides these exhalations.

It is also taken for the exhalations themselves about the whole *earth*. There is no small controversy amongst modern *Philosophers*, concerning the *body* which consisteth about the *earth*. For many *Mathematicians* of sound knowledge determine, that there is nothing besides exhalations elevated from the *earth*, and therefore they take the *Atmosphere* and *Air* for one, and the same, and immediately after the *Atmosphere*, place the *Ætherial substance*. But other *Philosophers* suppose, that besides these exhalations in the space about the *earth*, that there is a certain peculiar and simple *body*, which they call *Air*, although that they freely grant, that exhalations may be changed into *Air*, and contrariwise into *clouds* and thick *vapours*. The same Persons, after this *Air* even to the *Lunary Orb*, place another subtle thin *body* different from the *Æther*, which indeed they term *Fire*, but they confess that it is less properly done, and that it doth not agree with our *fire*; for it is a calid substance (not burning) dry and very subtle, not to cause the refractions of the *rayes* of the *Sun* and *Stars*, which yet they will have to be done in this *Air*. Those being well considered, these two opinions of the *Philosophers* seem rather to differ in words than in matter it self. For as for the *Air*, because that they grant it so gross, that a refraction of *rayes* may be made in it, and that it may be generated from exhalations by a light mutation, the *Air* seemeth nothing else but a subtle exhalation, although it was not exhaled from the *earth*. As for the *Sublunary Fire*, when that they confess that it is so improperly termed, but they affirm, that it is so tenuous that it causeth no refraction of *rayes*; this seemeth little to differ from the *Æther*. We affirm therefore, that the *Atmosphere* and *Air* are a *body* about the *earth*, on which the *rayes* falling are refracted, (laying aside the controversy whence this *body* hath its original) which definition agreeth with the former: For neither is it likely that any exhalations can be elevated from the *earth* so subtle, that they should cause no refraction or impediment to the luminous *rayes* proceeding from the *Æther*: yet if that such be granted, we cannot know their *Altitude*, and whether that they be excluded from the *Atmosphere*; which yet if that any one will sharply urge, supposing that the little *fires* or *rayes* cast from the *Sun* on the *earth*, again recoil to the *Sun*; he will not deny but that the latter definition is commodious: Therefore the *Atmosphere* and *Air* are naught else but a contexture of many small *bodies* which adhere to the *earth*, as a *down* or *wool* circumvesteth a *Peach*.

Of the At-
mosphere.

Proposition III.

Sometimes more, sometimes lesser exhalations are drawn from the earth, especially in divers places.

The cause is, 1. The various elevation of the *Sun*, above the *Horizon*, or depression beneath it. 2. The diversity of the age of the *Moon*, and its elevation above the *Horizon*. 3. The rising and setting of the other *Stars*, and their constitution above the *Horizon*. 4. The diversity in the parts of the *earth* them selves, for watery and humid places do more easily send forth vapours than earthy and dry.

Of exhalations

Pro-

Proposition IV.

The exhalations which constitute the Atmosphere, are of a divers kind (especially in sundry Regions) viz. watery, saltish, earthy, sulphureous, spirituous. The sensible compounded exhalations, or parts of the Atmosphere are divers, viz. mixed of simple particles.

Of the exhalations which constitute the Atmosphere.

The cause is, because that in the parts of the earth such bodies are of a divers sort, and are advanced by heat, some more easily, and other some with greater difficulty. Concerning the earthy particles some one may doubt, because that those are scarcely apt to be elevated. 1. By reason of the smallness of their dusts, which are light; seeing that gravity is an affection of compacted bodies. 2. By admixture of sulphureous particles which violently carry those earthy ones with them.

Moreover, that there are sulphureous particles in the Air is proved from the fiery Meteors, Lightnings, Thunder, and the like: yea, a sulphureous odor or scent after Thunder and Lightning manifestly asserteth the same.

As for the watery parts we ought not to question; for saline and spirituous exhalations, by reason of their tenuity, are easily exhaled from the earth. Little Animals generated in great number and abundance in the Air, confirm the same.

The Aristotelians divide exhalations into two kinds, to wit, vapours and fumes. Vapours are generated of water, and easily return into the same again. Fumes proceed from dry bodies. So Sal Armoniac vanisheth into smoke, fire being placed under it. This also is the cause that in divers Regions a different Air is discovered. Also that it raineth in one place, and not in another.

Proposition V.

The least particles of the Air, and those all insensible, repel or reflect the rays as a Looking-glass; but some of the particles of the Air being sensible and compounded, do transmit many rays, but reflect fewer; others, on the contrary, transmit fewer rays, and reflect more.

The parts of the Atmosphere.

Therefore the parts of the Atmosphere are divided into those that are opac and pellucid: these are those that transmit many rays, the former are those that transmit fewer.

Therefore because that the least particles (both water and earth) being Atoms, are solid little bodies without any pores, so that they transmit no rays, but repel them; because that it is very probable that a perspicuity, or a transmission of rays doth require pores orderly placed in a body, and empty little spaces.

But the parts of the Air or Atmosphere composed of little particles, if that they shall have ordinate and many pores, they will be perspicuous and transmit many rays: but if that those particles shall be composed or aggregated very confusedly, they will transmit rays without any pores; thence it cometh to pass that the Sun discussing a thick cloudy opac Air, doth make it perspicuous, to wit, more porous.

Now that the least particles reflect rays, is manifest from hence, that the rays of the Sun in a most serene Air be admitted into an obscure Chamber through a narrow hole, you will see manifestly from the particles flying in a great number in the Air, that the rays are reflected to the eye as from a glass. Now seeing that those particles are yet sensible, the same must be concluded concerning the least particles, and those that fly the sense.

Now

Now those, who will have humid attenuated vapours to be perspicuous, but not dry ones and smoaks, they are refuted by experience and reason. By reason, because that fumes and dry exhalations may be made equally subtle and porous, as those that are watery; but they suppose that perspicuity doth not consist in the mode or reason of the pores, but in a peculiar quality: But it is manifest by experience, because that the Air is serene, it hath more dry than moist particles; for in that new kind of Wind-gun, which is not discharged by powder or fire, but by the help of wind and air, the Air is so condensed, that it scarcely comprehendeth the twentieth part of the former space; yet neither do they create any kind of humidity in the Gun, which must altogether happen, if that the particles of the serene Air were watery.

Proposition VI.

Exhalations do not ascend of themselves, and of their own nature upwards, but they are forced by a violent motion, or the Air is not light but heavy, in a proper mode of expression.

All that is to be termed grave or heavy, is moved, to the Center of the Earth, except that it be hindered, but the Air doth that for the Earth being digged up, the Air descendeth into the space made: That therefore it is carried upwards, is thus performed.

1. That heat rarifieth it to seek a greater space.
2. Because that it is forced by another vapour.
So in cold places, as in Nova Zembla, and with us in the night, reason up Mist ascendeth, but the heat of the Sun approaching rarifieth it, and causeth one part to force out, and thrust forwards the other: For if that those small particles of Air were free, neither mutually implicated one within another, then at length it would be light.

Of exhalations

Proposition VII.

The upper parts of the Atmosphere are more subtle than the lower, yet it may so come to pass, that the middle parts may be more gross and condensed than the lower parts about the Earth.

Therefore the more light parts fly to the upper place, they are more subtle and light; hence the truth of the member of the former Proposition is manifest. Now the cause of the latter member is, that the parts in the middle Air easily coagulate again, and so become thicker: for the hot or calid Particles being carried up with them, have forsaken them, and the Rays, refracted from the Earth, in that middle Region, by reason of their distance, have no force.

Thence it cometh to pass that after Rain, the middle Air is more serene, because the more thick parts are separated.

Proposition VIII.

The Atmosphere or Air being heated, possesseth more space than before; now it is how much it is more destitute of heat, by so much the more it contracteth itself, and occupieth the lesser space.

This is excellently shewed by that Instrument which we call a Thermometer, or Weather-glass, because that we measure the temperature of the Air and heat by it in hot and cold, in which we discover the Air to become more condensed, and to occupy lesser space in the Glass, by how much the Air acquirith less heat, as we shall shew in the following Proposition. Now the cause of the

The Air being heated possesseth more space than before.

Pro-

Proportion is *a priori*, because the calid Particles, either of the Rayes of the Sun, or of another fire, are most subtile of all the Particles of the whole world, and in continual motion. Therefore those Atmospheres, whilst that they are admixed, separate and divide these Particles with a great force, and so cause more pores; and these little fires departing, the Particles of the Air left to themselves unite again, or are mutually complicated within themselves.

Corollary. Therefore the Altitude of the Air or Atmosphere is not constant, but decreaseth and increaseth, *viz.* at Noon-day it ought to be greater, at Midnight least, about the time of the rising and setting of the Sun moderate, as in Proposition XIV.

Proposition IX.

To make a Thermometer, Thermoscope, or Weather-glass, by which we may discover the mutations of the Air in heat and cold.

How to make
a Thermome-
ter or Wea-
ther-glass.

See Scheme.

Take a Glass of an oblong and cylindrical neck with the spherical small head L H, let this be fixed to the Table or Board M N P Q, the head being erected. Let a Vessel with water be placed under the Orifice (which is best to be coloured) so filled that part of the pipe or neck L F may be hidden in it: Now let the time of the moderate constitution of the Air, or at that time at whose temperature you will compare the temperature of the Air of the other days, and at that time let the water be poured into the Vessel, so it will happen that the Air becoming more frigid, the water will ascend upwards beyond F, because that the Air being condensed with cold, which before filled up the space F A, now possesseth less space. On the contrary, the Air being rendered more hot, the water will descend from F towards L, because that the Air F H being rarified now requireth more space.

Now you will find the degrees of accretion and diminution of the heat and cold, if that you divide the Line F A on the Table into certain parts of numbers. Or without putting a Vessel under, set the Glass L H even at the extremity L, have a Globe with a little hole from the side, and let this Globular Vessel be filled with Air; for so also the degrees of heat will be shewed by the ascent and descent of the water.

Proposition X.

The serene Air may be carried so by a most vehement fire that it may occupy a space 70 times greater than it did before: On the contrary, it may be so condensed in a Wind-gun, that it may only possess a 60 part of the former space, but the heat of the Sun bringeth not so great a rarification, or the cold so great a condensation to the Air,

The same is proved from that, that if you take an *Æolopile* and heat it with fire, so that it may then contain 13 ounces; but the same being cold, and returning to its former natural estate, it will contain 13 ounces, a dram and a half: Therefore the space that the Air occupied whilst that it was hot, is greater than the space that the Air possessed when refrigerated, that the difference of the space is that part of the *Æolopile* that receiveth half a dram of water, if that the whole receiveth 13 ounces with half a dram; and the part of this *Æolopile* is almost the 70 part of the whole space in the *Æolopile*, therefore the Air being hot, hath possessed a space 70 times greater than it doth when it returneth to its natural estate.

Proposition XI.

Why in the places in the Frigid Zone, at the time in which the Sun riseth not altogether unto them, on some days the Air is clear and serene, and for the most part cloudy and foggy.

Of the Air in
places of the
Frigid Zone.

I answer, the cause of this gross and almost perpetual Mist or Fogg, is the small heat of the subterraneous Earth it self; or else it is derived from the Sun, and likewise the Moon (which in the time of the obscurity of the Sun remaineth many days

days and nights continually above the Horizon) & the other Stars; which heat because it is weak, cannot dissipate this Mist. Now that some days or nights afford a serenity of the Air; this happeneth not because the thick vapours are attenuated, but because that they either sink down into the earth, or else are forced into other places by the winds.

Proposition XII.

Why oftentimes in the greatest cold of the Winter, the Air is yet subtile and serene, when that yet the cold condensateth and contracteth the Air?

Cold is twofold; Moderate or Extream. Moderate cold rendereth not the Air serene, but cloudy, by reason that vapours are elevated, but not dissolved by that little heat which is mixed or adjoined to that cold. But an extream cold maketh the Air serene for a twofold reason. 1. Because it rendereth the grosser vapours of the Air more gross, and so causeth them to fall, and make the Air more subtile. 2. Because that the pores of the earth are shut and bound up, and the vapours themselves cannot exhale and render the Air turbid. The Sea it self indeed is not bound up with Ice, yet the particles are so condensed with Ice, that it is not so apt for exhalations, although it sendeth forth many; for the condition of it, and the earth, are different.

The Air sub-
tile and serene
in the greatest
cold of the
Winter.

Proposition XIII.

Why the Air being beheld at the Horizontal Line, appeareth more thick and cloudy than that in which we are?

The cause is twofold: 1. Because that the Air about the Horizon is indeed more cloudy. The other is a fallacy or deception of the sight, or judgment from our sight; for the eye apprehendeth the distances of columns placed in a long order and series, and therefore as the judgment supposeth the remote columns to be conjoined, so also it apprehendeth not the distances of the particles of the Horizontal Air, but imagineth them conjoined; but the eye beholdeth the distances of the elevated Air under greater Angles, and therefore better apprehendeth it. The same is the reason why the Air, which appeareth cloudy to us, removed from it, when we come to it, or are in it, seemeth less misty or cloudy.

Proposition XIV.

Whether that the Altitude of the Atmosphere or Air above the Earth, be the same in all places at one and the same time; and whether its figure be spherical.

That the Altitude is not the same, but divers in sundry places, seemeth to follow from thence, that the Sun is only Vertical to one place at one time, and it sendeth forth oblique rayes; and therefore more weak unto other places, by how much the place is more remote from the Sun, and nearer to the Poles: therefore the pores of the rayes of the Sun are very different to the elevating of the vapours, and therefore they are raised to different Altitudes, to wit, in a place unto which the Sun is vertical, his Altitude is the greatest, in the opposite place the lesser, in the places about the Pole moderate, so that the Air receiveth an oval figure.

Of the Altitude of the
Atmosphere.

But the contrary is more probable, *viz.* that the Altitude of the Atmosphere is the same in all places; for although that the Vapours and Air be more elevated in some places than in others, yet because that the Air is fluid and tendeth by its gravity to the Center of the earth: therefore the more elevated part of the Air presseth down the Air placed under it, and this thrusteth down another more depressed, until all the parts acquire the same Altitude.

And after the same mode the *Spherical Figure* of the *Air* shall be demonstrated, as in the *thirteenth Chapter* we have proved, with *Archimedes*, concerning the *water*, by reason that the same *Hypotheses* are prevalent here, which we there assumed; to wit, that the part of the *Air* less pressed is expelled by that which is more pressed; for every part is pressed by the *Air* that is above it: wherefore the *Figure* of the *Air* is *spherical*, not *oval* as some will have it: but if the forementioned *Hypotheses* be not granted, the demonstration falleth. *Des Cartes* also maketh the *Air* oval in figure for a peculiar reason; see *Chapter fourteen*.

Proposition XV.

Condensation or Rarefaction of Air changeth not its Altitude.

Because that the whole *Atmosphere* is not condensed; but only some parts: and at all times some parts are condensed; sometimes these, sometimes those; wherefore the *condensation* or *rarefaction* of one time, doth no more alter the *Air* than the *condensation* or *rarefaction* of the first time. There only seemeth to be a difference; that at one time there may be a greater *condensation* or *rarefaction* than at another: but this difference can little augment the *Altitude*.

Proposition XVI.

The Altitude of the Atmosphere or Air is not only the same in divers places, but it remaineth the same, and that constantly at all times both Winter and Summer.

For although that heat in the *summer* of our place may more elevate also our *Air* more than in *Winter*; yet because that the *Winter* is at the same in another place of the *earth*, the *Air* is less raised in it; wherefore part of our *Air* shall be moved towards the *Air* of those places, where the *Air* is less elevated, viz. to the more depressed place, as we have shewed in the *fourteenth Proposition*. And on the contrary, whilst that the *Air* of the place where we are, is depressed by reason of the cold of the *Winter*, part of this *Air*, where the *Summer* or the greater heat is, shall be moved towards our place, viz. until the whole *Air* be equally distant from the *Center* of the *earth*.

The same is the reason concerning the *Day* and the *Night*, for whilst that the *Air* is depressed and contracted in the *Night* to us, in another place it is more rarefied; and so is moved towards the *Air* of our place, until it again make a *spherical figure*; and because that all are equal on every side, therefore the name *Altitude* shall remain in every time. But because that the *Air* is condensed more in one time and place than in another, that difference seeing that it is very small, can very little vary the *Altitude*, as we have shewed in the precedent *Proposition*.

The same is the account of *Rains* or *Mists*, or *Vapours* that are in burs, or in another place: for to these it seemeth that the *Altitude* of the *Air* should be less or more. But I answer, that there is scarce any time, in which in some place of the *earth* it raineth not; and that the *Mists* fall not; and therefore when that it raineth in one place, the *Air* becometh not lesser than it was before, because that before it rained in another place: and so the reason is equal, and the quantity of the *Air* is neither augmented nor diminished.

Pro-

Proposition XVII.

By how much the Air is more cold, by so much the more it is condensed; and therefore for the most part more condensed in the Winter than in the Summer, (to wit, in some places of the Earth;) also in the Night than in the Day: Now watery thick exhalations in the Winter and the Night, cause and augment that condensation; especially in the Morning and Evening.

The truth of the *Proposition* is manifest from the preceding *Propositions*: neither doth it obstruct for that part of the more hot *Air* is moved to the more cold, as to a more depressed place; because that not that it is self, but another adjoining approachment, by reason of continual protrusion, and if that that happeneth, yet in a cold place that becometh also cold.

Proposition XVIII.

There are three Regions vulgarly made in the Air, whereof the middle is that in which the Snow, Rain, and Hail is generated: The first is that in which we are, extending itself even to the middle Region: the third is that which beginneth the uttermost bound of the middle Region, and extendeth it self to the utmost superficies of the Air (even to the Sublunary fire, as the Aristotelians affirm.)

The *middle Region* is more cold than the first and third, which are reckoned more hot; but the *third*, by reason that it containeth more subtle, fiery, and sulphureous parts of exhalations, which fly to it about the place of the watery particles, or are thrust down as more light: (The *Aristotelians* say, that it is hot by reason of its vicinity to the fiery Sphere.) But the first, because that the Rays of the *Sun* falling, are near there reflexed, and so duplicate the heat: It happeneth that some particles of subterraneous fire exhalings, are in this Region. But the *middle Region* is more cold; by reason that the reflected Rays are there vicine to those that fall in on the *Earth*: neither do they contain any fiery sulphureous particles, but watery ones; for the sulphureous and fiery ones, that have carried up the watery ones, fly higher.

Proposition XIX.

By how much that place of the Earth, unto which the Sun is vertical, recedeth to the Pole; or by how much the place is more near the Poles, by so much the less distant the place of the Air is from the Earth in which the Rain, Snow, Hail begin to be generated.

The reason is, That the Rays of the *Sun* do fall more obliquely on the places about the *Poles*, than on the places about the *Equator*; and therefore the Rays refracted are much withdrawn from those falling in, and so cause lesser heat; and for a lesser space than the Rays, under the places of the *Sun*, or under the *Torrid Zone*: and so in a more nearer place, the watery vapours may unite to generate watery Meteors.

Corollary. The Superficies terminating the first Region of the *Air*, is of an oval figure, or rather *Elliptical* or *Sphere* like, protuberating in the *Torrid Zone*.

Pro-

Condensation of Air changeth not its Altitude.

The Altitude of the Atmosphere is always the same in divers places.

The colder the Air the more condensed.

Three Regions in the Air.

Proposition XX.

By how much the place of the Earth is nearer the Pole, by so much distance the Region of the Air is distant from that Earth that beginneth the third, or in which the more subtle and Sulphureous particles are.

For there are the fewer and more subtle particles in part of the Atmosphere, by how much it is nearer the Pole, because that the heat of the Sun elicitedeth fewer from the Earth. Therefore, because that there are fewer particles of the third Region under the Frigid Zone, than in the temperate, and in this fewer than in the Torrid; and yet the utmost bound of that third Region is equally distant from the Center of the Earth, according to the sixteenth Proposition. Thence it followeth, that the beginning of the Region under the Torrid Zone, is far more distant from the Center of the Earth, than the beginning of, that in the Torrid and Temperate Zone.

Corollary. The Superficies terminating the second Region of the Air, or distinguishing it from the third, is Spherical, and protuberating in the Frigid Zone.

All these must be shewed to Youth by Diagrams.

Proposition XXI.

The Rays of the Sun, Moon, and Stars, do not directly arrive at our eyes from the Aether through the Air; but where they enter the Air, they are withdrawn or deflected a little from a direct passage, which the skilful in the Opticks term to refract the Rays; and so those Rays refracted come to our eyes, and shew us the Star.

This part which treateth of the refraction of light, is the most subtle part of the Science of the Opticks; for Experience testifieth, that Rays proceeding from any visible body, if from one medium, they fall in upon another, that is, either more thick or subtle than the former, they are refracted where they have entered at this other Medium, or deflect from a strait direct course to the sides. The Explication is easie from a Vulgar Experiment: Let any Vessel be taken; and let a ball of Gold or Copper, or Gold money, be affixed to the bottom; then depart back from the Vessel, by reason of the obstacle of the sides of the Vessel, you can no longer see the Money at the bottom. Then pour water into the Vessel; which being done, you shall see again in the former distance, the Money at the bottom. From hence it followeth, that seeing no Ray could directly come from the Money to the eye, by reason of the interposition of the sides of the Vessel; and yet afterwards the water being infused, the Rays arrived at the eye: It followeth, I say, from hence, that the Rays proceeding from the Money, where they enter into the Air, from the water, do deflect, or are refracted from the direct way, and being so refracted, they arrive at the eye. It is called refraction, by reason that for this cause an Oar being partly in the water, doth appear refracted or broken.

So let the Center of the Earth be T, L the eye in the Superficies: let $drfp$ be the Superficies of the Atmosphere or Air. Therefore no ray can directly arrive at the eye L, because it is beneath Lf g: for other inferior rays would fall in on the tumor of the Earth L o. Wherefore no Star can appear in a direct ray until it come to the Horizontal line Lf g: And the Stars appear before, viz. whilst that they are yet beneath Lg; for Example, in S; and yet from S to the eye L, no ray can directly come, because that it should first fall on L o. Therefore of necessity, the ray which cometh from the Star S to the eye L, is not a direct, but a refracted ray, viz. Lf, which refracted ray is propagated from the incident ray Sf, to wit, Sf falling from the Aether, on the more thick Medium, viz. the Atmosphere in f is refracted and becometh f L, when that it was direct in n. And so the Star appeareth before that it could

See Proposition 16.

Of the Rays of the Sun, Moon, and Stars.

See Scheme.

could truly appear by a direct ray, that is, before that it arriveth at the Horizontal line Lf g.

So a Star being in S, is not seen by the direct ray SL, but by the refract r L, whose incident ray is f r, and direct r m; and therefore the Star S appeareth higher, by reason of refraction, than it is; and in another place it appeareth high in the Arch x g, or in the Angle r l g, as if it were in x, when indeed it is in f.

For this is the nature of refractions, that the rays falling from a more rarified medium on a more thick, as from the Aether upon the Air, they become refracted, or decline towards the perpendicular, drawn through the point of incidence, or falling into the superficies of the incidence or medium. For Example, the ray Sf falleth in from the Aether on the Air: f is the point of the incidence, Tf the perpendicular drawn through f to the superficies d r f p; therefore the ray Sf n shall be refracted f T, that of f n may be made f L.

So of r m is made r L; but the contrary is, when that the rays proceed from the water to the Air, for then they more recede from the perpendicular line drawn.

Lastly, this also is the nature of refractions, that the rays falling in perpendicularly on the superficies of another medium, are not refracted, but only those that fall obliquely, and not perpendicularly; and by so much they are the more refracted, by how much they fall in the less perpendicularly, or by how much the more they depart from the perpendicular. So the rays ST, f T, H d T, are not refracted, because that they are perpendicular on the superficies d r f p; but the rays Sf, S r, are refracted, because that they fall obliquely, and indeed Sf more than S r.

From whence it followeth, (which Experience also testifieth,) that by how much the Stars are more near the Horizon, by so much the more they refract their rays; by how much the higher, by so much the less. And Astronomers have observed, that the refraction is insensible where the Star hath attained the altitude of 20 degrees; not that there is no refraction, but that it is very small.

And for many Examples the skilful in the Opticks, and later Mathematicians, have derived the Rule of refraction of all Rays falling in obliquely; viz. that in every medium there is one constant account between the sign of the Angle falling in, and the sign of the Angle refracted; to wit, the Angle n f T is termed the Angle of incidence, L f T the Angle refracted, n f L the Angle of refraction: and so in the refraction of the ray f r m. Therefore as the sign of the Angle T f n is to the sign of the Angle T f L, the same is the reason of the sign of the Angle T r m to the sign of the Angle T r L. Thence it followeth, that if from observation we have the quantity of refraction to the elevation of one Ray, we may thence know the quantity of the refraction of all others, howsoever elevated.

Proposition XXII.

The Atmosphere or Air, causeth the Sun, or the rest of the Stars, to be seen before that they arise in the Horizon; also to appear for some small space of time after that they have set; also that they appear higher than they are, and in another place of the Heavens, as long as that they are no higher than 20 degrees.

We have sufficiently explained the Cause in the precedent Proposition; only we shall add some Experiences or Natural Phenomenons. When that the Dutch wintered in Nova Zembla, the Sun appeared to them sooner by sixteen days than it was in the Horizon, that is, when that it was as yet depressed beneath the Horizon about four degrees, and that in a serene Air. And famous Astronomers have found it out with Tycho Brahe, that in our places the Morning-sky or Air being serene, we may behold the Sun elevated above the Horizon 34 minutes, when that as yet he is wholly under the Horizon, yet so that

The Air causeth the Sun and Stars to be seen before they arise in the Horizon.

that his *limbus* or *skirt* doth enlighten the *Horizon*. And the *Sun* seemeth to arise, when that as yet he is depressed about 34 minutes beneath the *Horizon*, to wit, the *Air* of the place where we are, being serene.

So the *Spica Virginis*, a bright *Star*, seemeth to rise to us, when that yet he is depressed 32 minutes beneath the *Horizon*, which is thence collected, because it seemeth to arise, when the *Cauda Leonis* is 34 degrees 30 minutes high, and in the same quarter in which this *Star* of the *Lion* then is. And the *Cauda Leonis* and the *Spica Virginis*, are distant thirty five degrees and two minutes.

Proposition XXIII.

By how much the *Air* or part of the *Atmosphere*, on which the ray of the *Star* falleth, is thicker, by so much it maketh the greater refraction, or other qualifications being equal; viz. the same elevation of the *Star*, and the same altitude of the *Air*.

So the *Angle* $n f L$ (which is, and is called *Refraction*;) is by so much the greater; or the refracted *Angle* $f L$ approacheth so much the nigher to $f T$, by how much the *Atmosphere* is more gross: For so the *Studios* in the *Opticks* have found it true in all sorts of *Mediums*.

Proposition XXIV.

By how much the *Air* is thicker, by so much the more the *Star* is depressed beneath the *Horizon*, when that it first beginneth to appear.

$L f$ is the refracted ray, which first maketh the *Star* to appear: $L f T$ is the refracted *Angle*; and let $S f n$ be the incident ray, and $n f T$ the *Angle* of incidence, $n f L$ shall be the refraction.

Now let us suppose the *Air* $f n L$ to be thicker than where it maketh the refraction of the ray $n f L$. If therefore it be thicker, it shall make the *Angle* of refraction greater, viz. $c f L$, and the incident ray shall be $K f c$. Therefore the *Star* being in K , the ray $K f$ shall be refracted, that the refracted *Angle* $f L$ may shew the *Star*: but the *Air* being less thick, the *Star* in S shall be first seen.

Proposition XXV.

By how much the *Air* is the lower, by so much the *Star* is the more depressed beneath the *Horizon*, when that at first it beginneth to appear, (that is, if there be the same serenity and thickness of the *Air*.)

For the *Air* being supposed lower, the refracted *Angle* $T f L$ shall be greater. For Example, If that $T 4$ be the altitude of the *Air*, the refracted *Angle* shall be (for the ray refracted coming first to L) $T 4 L$. Let 49 be drawn parallel with $f n$, because that so it is from the *Hypothesis* of the 21 *Proposition*; as the sign of one refracted *Angle* $T f L$ is to the sign of the other refracted *Angle* $T 4 L$, (for they are supposed to differ so much in altitude, not in density;) so is the sign of the *Angle* of incidence $n f T$, to the sign of the *Angle* of incidence $3 4 T$, for the refracted $4 L$, and the incident $3 4 6$. Now the sign of the *Angle* $T 4 L$ hath a greater respect to the sign $T 4 9$, than the sign $T f L$ to the sign $T f n$, as is easily demonstrated by a *Diagram* described according to this draught. Wherefore the sign of the *Angle* $T 4 L$ hath a greater respect to the sign $T 4 9$, than the sign $T 4 L$ to the same sign $T 4 3$. And therefore the *Angle* $T 4 3$ is greater than the *Angle* $T 4 9$, and $3 4 L$ is greater than $9 4 L$, that is, than the refraction $n f T$. The sign $T 4 L$ is greater than the excess of the sign $T f n$ above $T f L$. Wherefore the *Angle* $3 4 L$ is greater than the *Angle* $n f L$; and therefore 43 protracted, viz. 346 the ray incident, for

The thickness of the *Air* causeth the depressing of the *Star*.

See Scheme.

for the refracted $4 L$ shall fall beneath $S f$, and the *Star* shall be in 6 , that it may make the refracted ray $4 L$; and therefore it is more depressed, than when it is in S , where the altitude of the *Air* shall be $L f$.

Proposition XXVI.

The same may be the refraction of any *Star* to the same situation of it, although the altitude of the *Air* be different, if that there be only a difference in the thickness of the *Air*.

The form of the *Problem* is more rightly propounded thus: The altitude of the *Air*, and the refraction being given, which the *Star* maketh at the given Altitude; and moreover another altitude of the *Air* being given, to find the density of this *Air*, or proportion of this refraction, such, that the same refraction may be at the given Altitude of the *Star*, which was in the first altitude of the *Air*. For Example, In the altitude of the *Air* $T f$, the ray of the *Star* $S f$ maketh the *Angle* of refraction $n f L$. If now that there be another altitude of the *Air* $T 4$, and yet of the *Star* S in the same situation of the incident ray 54 , (which by reason of its great distance is as it were parallel with $S f$) the refraction $34 L$ is equal to the refraction $n f L$.

It is demanded, whether that this can be done; and if that it can, whether that this other *Air* ought to be thicker, and in what proportion of density or rarity?

I Answer, that it may be done, and that if the other altitude of the *Air* be greater than the former $T f$, the density of this other or second *Air* ought to be greater; but if that the other given altitude be lesser: for Example, $T 4$, the thickness of the other ought to be lesser, or rarity greater. Now how great this density or rarity ought to be, is thus known.

First, let the *Angle* $T 4 L$ be found out (from the given $T 4$, and $T L$) also $T f L$; then the sign of the *Angle* $T 4 L$, also the sign of the *Angle* $T 4 3$ (which is the *Angle* of the incidence of the ray 346 ;) therefore you have the proportion of the density of this *Air*, or rarity of the same to the rarity of the *Air*, from whence the incident ray cometh. After the same manner let the signs of the *Angle* $T f n$ and $T f L$ be taken, so these signs will shew the proportion of the rarity of the former *Air* to the rarity of the *Air*, and by the comparing of these accounts you will know, how much the latter *Air* of a lesser altitude ought to be more rare, or of a lesser thickness than the former.

Yet in proper manner of speaking, the refraction is not the same, because we understand the same refraction, if that the rays falling in equally are elevated above the superficies of the *Mediums*.

Proposition XXVII.

If that the *Air* of one place be both thicker and lower than the *Air* of the other place, the *Sun* and the other *Stars* shall be more depressed beneath the *Horizon* of the former place, when that they begin first to appear, than in the second place.

The *Demonstration* of this *Proposition* is manifest from the 25 and 26th preceding *Propositions*. It followeth from thence, that if the *Air* be thicker and more low in the places of the *Frigid Zone*, than in the places of the *temperate* and *Torrid Zone*; that the *Sun* may be seen in those places, far sooner before his rising, and longer after his setting, than in the other places: for when that he is more depressed beneath the *Horizon*, and therefore ascendeth more obliquely, and in a longer time to the *Horizon* of those places; thence it followeth, that he is seen far sooner before his rising in the *Frigid Zone*, than in the *Torrid*. But it is a question, whether that the *Air* be lower in the *Frigid Zone*, and though the *Sun* appeareth sooner before his rising, whether that only a thickness of *Air* is sufficient; of which more afterwards.

Z.

Pro.

The *Air* causeth the depression of the *Sun* and *Stars* beneath the *Horizon*.

Proposition XXVIII.

Of the thick-
ness of the Air.

If that the *Air* of one place be of a more thickness, and higher than the other, it may be an excess of thickness, so that they may not see the *Stars* before the rising in so great a depression beneath the *Horizon*, than in the other *Air*: also the excess of thickness may be such, that the *Stars* may begin to be beheld in the same depression. Lastly, the excess of thickness may be such, that the *Stars* may be beheld in a far distanter or longer depression beneath the *Horizon*, than in the other *Air*. Yea this thickness may bring with it a far greater depression than the lowness of the *Air*; and instead of *refractions* in *Novus Zembla*, a notable altitude of the *Air* with thickness is required.

Proposition XXIX.

It cannot be, that the *refractions* of any one *Star* in two *Altitudes* in one *Air*, should be equal to the *refractions* of the same *Star* in the same *Altitudes* in another *Air*, that is higher or lower, or thicker or more subtle.

See Scheme.

In the former *Proposition* we have demonstrated, that if in the altitude of the *Air* *Tf*, the incident ray *Sfn* maketh the refraction *nfL*, viz. *T4*, the ray *S4* in another altitude (which is parallel with *Sf*, by reason of its great distance, and the rays are from one point) make the same refraction *34L*, which is equal to the refraction *ncL*, viz. if that the *Air* *40LW* be less thick than *foLd*. Now therefore it is demanded, whether that this may be done in the two altitudes of the *Star*: For Example, It being supposed that in the situation of the *Star* *S*, the *Air* *foLd*, and the *Air* *foLW* are so, that they cause an equal refraction: whether that in the altitude of another *Star*, for Example, in *S*, in the same *Atmospheres* *frdLo*, *4WL* can again be an equal refraction, or the same *mcL*. And I say, that it cannot be; for let the *Periphery* of this *Air* *T4* be described in the Center *T*, the interval of another *Altitude*, cutting *Lr* in *3*. Therefore *3L* shall be the ray refracted in this other *Air*, through which the *Star* *S* is seen: for the ray *3L* is the same with *rL*, by reason that the same apparent altitude *sg*, or Angle *rLf*, of the *Star* *S* is laid down. Moreover for this refracted Angle, let the incident ray be drawn through *3*, *73W*, which shall be parallel with *Srm*, if that the refraction *L3W* were equal to the refraction *Lrm*: for let *T3* be also drawn, the Angle *T3W* shall be the Angle of incidence, *TrL* the Angle refracted, *W3L* the refraction.

Therefore as the sign *34T* is to the sign *L4T*, so is the sign *W3T* to the sign *L3T*.

And as the sign *nfT* is to the sign *LfT*, so is the sign *mrT* to the sign *LrT*.

And now *34L* is equal to *nfL*; wherefore *W3L* is not equal to *mrL*, or *W3* is not parallel with *mr*.

Now this consequence requireth a more difficult and operose Demonstration than can be propounded in this place, seeing that it rather belongeth to *Geometry*; yet it shall be made manifest from the *Analysis* of the following *Proposition*.

Pro-

Proposition XXX.

The two *refractions* of any *Star* being observed in two *Altitudes*, to find thence both the altitude of the *Air* and the thickness of the *Air* in respect of the *Ether*, or the rule of *Refraction* in this *Air*.

The refraction of a *Star* is of an equal difference between his observed *Altitude* and the true one, which is known by calculation, and therefore it is easy to know the *refractions* of the *Stars*. Now to come to the purpose, let the refraction *nfL* of a *Star* in *S*, and ejaculating his ray *Sf* be given; then again in the altitude of the same *Sg*, the same refraction *mrL*.

Then in the Circle *drfpd*, whose Center is *T*: *TL* is given (the *Semidiameter* of the Earth,) and *Tr*, *Tf*, *Lf*, *Lr* being drawn, let the Angles *TLf*, *TLr* be given (compounded of the *Altitude* of the *Star* and *90 minutes*;) and the Angles *nfL*, *mrL* are given; and we know besides, that the same is the account of the sign of the Angle *nfT* to the sign *LfT*, which is the account of the sign *mrT* to the sign *LrT*. From these we must find the *Semidiameter* of the Circle *Tf* or *Tr*, and moreover the account or equality of the sign *nfT* to the sign *LfT*, or we must find out the Angle *TfL*.

Indeed the *Analysis* doth teach that it may be found out, but by a most difficult Solution, so that the *Synthesis* or collection cannot be found out without many *Propositions* premised; like so many *Indexes*, which are altogether improper to this place. Yet we will produce the *Analysis*, both that we may shew this Problem to be determinated, and also that the truth of the preceding *Proposition* may also be confirmed.

Let *TL* be *f*,

The sign of the right Angle *TLfS* be

The sign *TLrS* be

The sign *nfLS* be

The sign of the Complement *Sg* be

The sign *mrLS* be

The sign of the Complement *K* be

The sign *LfTS* be

Therefore it is in the Triangle *fLT*,

As the sign *LfT* is to the sign *TLf*, so *TL* is to *Tf*.

As *a* to *b*, so *isf* to *bf*.

And because that the sign of both the Angles *TfL*, *Lfn* is given, the sign also of the whole Angle *nfT* shall be given, viz. if that the signs of both Angles be multiplied alternately unto the sign of the Complement of the other; and the aggregate of the produced be divided by the ray *b*; therefore the sign of the Angle *nfT* is $\frac{ba \times db - do(bb aa)}{b}$.

Then in the Triangle *TLr* are now known *Tr*, *TL*, the sign *TLr*. Therefore as *Tr* is to *TL*, so is the sign *TLr* to the sign *TrL*.

As *bf* is to *f*, so is *c* to *a* for the sign *TrL*.

And let the sign *mrL* be also given, and you shall find according to the former Rule of the whole *Sinus*, *mrT*, viz. if that $\frac{gf \times ka \times \sqrt{gg ffb - gg cc aa}}{bb ff}$

or if $\frac{k c}{b}$ be equal to *m*, and $\frac{gg cc}{bb}$ be *nn*, that the sign shall be $\frac{m a}{f} \times \sqrt{\frac{gg ff - nn aa}{ff}}$

Therefore we shall have the signs of four Angles *LfT*, *nfT*, *LrT*, *mrT*. now we know these to be proportional; therefore as the sign *TfL* shall be to the sign *Tfn*, so the sign *TrL* shall be to the sign *Trm*.

As *a* to $\frac{ba \times db - do(bb aa)}{b}$, so $\frac{ca}{f}$ to $\frac{ma}{f} \times \sqrt{\frac{gg ff - nn aa}{ff}}$

L 2

And

And therefore as b to c , so is $ba+db-dv$ ($bb-aa$) to $gf+ma-v$ ($ggff-nn aa$).
And $bgf+cdb-bma+cha+bu$ ($ggff-nn aa$) equal to dv ($bb aa$).

For $bgf+cdb$ take p , and for $-bma+cha$ place $qq a$.

And $-p-qua-2pqqa$.

$+bbggff--bbnnaa$.

$+ccddbb--ccddaa$.

$bbggffccddbb-bbggffccddaa$.

Equal 2 v

$ccddbbnnaa$

$+bbnnccddaa$

And the division being made by $2p$, and other signs being substituted, it shall be

$3-taa+qq a$ equal to $v(x-ya+33 a)$

And $r+ta+qa$

$3-taa+qq a$ equal to $x-ya+33 a$

$2-taa-2rtaa$

So a division again being made by $tt+33$, and other signs being substituted, it shall be $a-da-33aa+aa$ equal to 2 .

For by this equation it is manifest, that the Problem is determined, and this very letter a , that is the sign of the Angle TfL , may be found as well by Geometry, as by the Arithmetical Analysis of Vietæ: or also more easily, if that the equation may be reduced to a lesser power by the division: and from hence it is collected, that two refractions may suffice to find out the altitude of the Air, Tf , and the very rule of Proportion; which I therefore take notice of, because that I see Kepler in the Epitome of his Astronomy, page 65. to require three refractions, although that he hath not attempted this way.

Although therefore it hath been shewed, that the solution of this Problem may be had both by Geometry and Arithmetick; yet because that both are very laborious and difficult, especially to those that are studious in Geography; wherefore most understand not this, therefore for their sakes I shall demonstrate another Method, by which the Problem may be more easily absolved, although it be less Mathematical, viz. by the Rule of Position: Therefore let Tf be taken in a certain measure at Tl .

Therefore in the Triangle fLT from fT , Tl , Tlf , the Angle TfL shall be found: So in the Triangle $TlTr$, from Tr , Tl , $TlTr$, the Angle TrL shall be found.

Then let the signs of the Angles TfL , Tfn , TrL , Trm be taken also, let a fourth part proportional be taken at the signs TfL , Tfn , TrL . If that therefore the sign Trm be equal to this fourth proportional part, then the assumed magnitude or altitude of the Air Tf shall be true and legitimate; but if the sign Trm be greater than that fourth proportional, the lesser sign Tf shall be taken; but if that the Minor be greater, then the Major must be taken, and this must be done so long until the sign Trm be found equal unto the fourth found out proportional part.

Example.

Let the Spica Virginis, or any other Star, or the Sun be placed to be beheld in the Horizon Ls , when that it is yet depressed 40. 32 minutes, viz. in S . therefore the refraction nfl is 32.

Then when that the same Star or the Sun hath the altitude gx 1 degree 22 min. or the true altitude gS 1 deg. then the refraction Lmr is found 22 minutes.

The

The Semidiameter TL is 860 German miles, let us put it to be 1000; and the Altitude of let us suppose to be of such part S , viz. $\frac{1}{1000}$, or $\frac{1}{1000}$ of the whole Semidiameter TL , that is $\frac{1}{1000}$ of about one mile.

Therefore the whole assumed sign in the Triangle TLf 10000000.

As fT is to TL , so is the sign TfL , 2001-2000-10000000-9999992 signs; 88 deg. 22 min. 40 seconds.

Therefore Tfn is 88 deg. 54 min. 40 seconds, whose sign 9998200.

Again in the Triangle TrL .

As Tr is to TL , so is the sign of the Angle TrL to the sign TrL ; 2001-2000-9997155-999-2159. Signs 87 deg. 43 min. 40 seconds.

Therefore Trm is 88 deg. 5 min. 40 seconds, whose sign 9994500.

Let the fourth proportional part now therefore be found at the sign TfL , Tfn , TrL , viz.

TfL Tfn TrL
As 9995992 to 9998200, so is 9992159 to 9994500.

With this fourth number, let the sign of the Angle Trm , which is 9994500, be compared.

Therefore we find, that this sign is almost equal to that fourth part, and therefore the assumed altitude of the Air ($\frac{1}{1000}$ of one mile) doth not much differ from the true Altitude. But if that you desire to have it more accurately, you may take another Altitude and work after the same manner, until the sign Trm be more equal to this fourth proportional part; or else apply the rule of Falshood, or from the defect of two Positions, to collect the true Altitude as far as you may; for you cannot well find it altogether accurate, because that signs in little numbers do very much vary, although at least there be only the escape of half a minute: moreover the Canon of signs ought to be most accurate.

We conclude therefore, that the altitude of the Air is the 2000th part of the Semidiameter of the Earth: this Semidiameter is 1633190 Perches; therefore the altitude of the Air is 816 Perches; wherefore one Perch containeth 12 Rhindlandish miles; but half a German mile is more truly taken, because that the refraction Lfn , by Tycho, is greater than that we took, and 36 yea 38 may be taken, which being laid down, the altitude of the Air cannot be less than one mile.

The altitude of the Air being known, an account must also be given of the density of the Air to the thickness or subtlety of the Aether, or a rule of the refraction in this Air, viz. which maketh such refractions at such situations of the Star; viz. the account of the sign TfL , found before at the sign Tfn , is the account or reason demanded.

As 9995992 to 9998200. And the reason why these refractions are so small, is, because that we have taken the most serene Air, which differeth not so much from the Aether in rarity, as some imagine to themselves.

Moreover, whether that the found out altitude of the Air be the same every where, and at every time, if from the two refractions observed at the two altitudes of the Star in another Air and in another time, the altitude of the Air be calculated after the same mode, as we have now done.

And that those that are studious in nature may have whereon they may exercise their calculation, and make a trial of the matter (whether that the Altitude be the same every where, and at every time,) I will give them here Examples from the Observations of Tycho, who hath observed the refractions of the Sun and Moon at every degree of their Altitude. And because that the Observations of Lansbergius (because that he observed them in a different Air, if that he observed them at all) differ from those of Tycho's, I will also add them.

The

The TABLE of Refractions.

The degrees of Altitude.	The Refraction of the Sun, according to Tycho.	The Refraction of the Moon, according to Tycho.	The Refraction of the Sun and Moon according to Lansbergius.
Degrees.	Minute.	Minute.	Minute.
0	34	33	33
1	26	25	25
2	20	19	19
3	17	17	17
4	15	15	15
5	14	14	14
6	13	13	13
7	12	12	12
8	11	11	11
9	10	10	10
10	9	9	9
11	8	8	8
12	7	7	7
13	6	6	6
14	5	5	5
15	4	4	4
16	3	3	3
17	2	2	2
18	1	1	1
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0
31	0	0	0
32	0	0	0
33	0	0	0
34	0	0	0
35	0	0	0
36	0	0	0
37	0	0	0
38	0	0	0

Lansbergius

Lansbergius placeth both the same *refractions* of the *Sun* and *Moon*: but Tycho maketh them somewhat divers, viz. about the *Horizon* he maketh the *refractions* of the *Sun* greater than those of the *Moon*; then the fifth degree of *Altitude*, he maketh them equal from this; then at length he maketh the *refractions* of the *Moon* a little bigger than those of the *Sun*. Indeed I confes my self ignorant of the cause of this, except it be to be ascribed to the weakness of the light of the *Moon*. Moreover, Tycho omitted the second *Minutes*, which yet should not be omitted, if that they come near to 60; because that there is use of them in the calculation of the *altitude* of the *Air*. Now you must know, that the *refractions* of all the *Stars* are the same, or else that the difference is insensible, viz. in one *Air*: But if that the *Air* be thick, the *refractions* will be greater. An Example of it is this (whereof a cause hath not yet been rendred sufficiently hitherto by any.) The *Dutch* Wintering in *Nova Zembla*, beheld the *Sun* after the *night* of some *Months*, when that as yet the *Limbus* or edge of the *Sun* was yet beneath the *Horizon* four degrees at least; therefore the *refraction* of *L* is 4 deg. 30 min.

Then at length, when that it was depressed beneath the *Horizon* 3 degrees 40 minutes, they saw him elevated above the *Horizon* 30 degrees (viz. his upper *Limbus*;) therefore the *refraction* in *r L* (we conceive *m r S* to fall beneath the *Horizon*, and *r L g* to be 30 min.) shall be 4 deg. 11 min. and *L L T* 90 deg. 30 min. From hence shall be found the *altitude* of the *Air* *L f*, and the reason of the density of that *Air* at *Nova Zembla*, which yet was serene at the time of the *Observation*. Now the *Altitude* is found much greater than the other *refractions* admit of, viz. of almost two miles; neither is it corrected by the position of a greater thickness of *Air* (as shall be shewed in the following *Proposition*) by reason that the Angle *T f L* cannot be greater than 85 deg. 30 min. (if that *n f L* is 4 deg. 30 min.) it becometh greater, if that *d f* be placed less than 2 miles. Therefore we do not undeservedly doubt of the truth of the *observation* of the *Mariners*, seeing that no like Example hath been observed, yea the contrary hath been observed in the same place. Moreover, no reason can be rendred, that in those places (after so long an absence of the *Sun*) the *Air* should be higher, than at the time wherein after so long a stay the *Sun* departed; seeing that rather the contrary doth follow, viz. the *Air* becoming more thick and lower (by reason of contraction) if that any one will urge the *altitude* of the *Air* to be inconstant. Yet when I more accurately weigh all the matters, three things fall in with me, by which that apparancy and great *refraction* may be saved, (for seeing that the *Master* or *Pilot* was skilful in *Astronomy*, and also that they saw the *Sun* elevated above the *Horizon*, in which he was yet depressed; therefore we ought not to deny the *Observation*, neither ought we to be suspicious concerning an *Errour* in the numeration of the *days* by reason of that long *night*; for when that they returned to their own Country, they reckoned the same day of the year that their Countrymen reckoned, which they could not have done, if that before they had made a false reckoning of the *days*: For if that we will admit to great an *altitude* of the *Air*, such as the *refractions* of the *temperate* and *torrid Zones* do not admit of, we must say, that the *Air* is every where the same both in the *torrid* and *temperate Zone*, as it is in the *frigid*; but the supream Region of the *Air*, both in the *torrid* and *temperate Zone*, is so subtle, that it maketh no *refraction*, but only the middle Region: Whence it is no wonder, if that the *refractions* in the *torrid* and *temperate Zone* be lesser; for although the *Air* be lower that causeth them (for which cause the *refraction* ought to be greater) yet its far more rare than the other *Air*. But yet an *Objection* may be made against this, viz. that the *observation* of the *Mariners* was made in a serene *Air*, as they themselves testifie. Unto this I answer, That yet it seemeth not so probable that the *Air* should be so subtle, as in the *torrid* and *temperate Zone*, when that the *Sky* is most serene: Secondly, it may be said, That that *Air* of the *frigid Zone*, when that the *Sun* after a long absence, returneth unto it, is first attenuated in the superior Region, and the middle is yet somewhat more thick; and therefore the *Sun* was seen through two *refractions*, as the *Stars* through the *Air* and a *Glass*.

See Chap. 26. Proposition.

Now

Now a double refraction doth far more depreſs the Star beneath the Horizon, than a ſingle, and ſo the altitude of the Air, the ſpace of one mile or 2. Neither may you here object, why the ſame doth not happen at that time, when that the Sun departeth from the Air, and maketh the beginning of the long Night: For then it is probable, that there is leſs difference in the thickneſs of the Air, by reaſon of the long ſtay of the Sun; or ſhall we ſay, that a thicker exhalation conſiſteth in the Morning times in that Zone, after that long abſence. Thirdly, If that you are not pleaſed to admit that double refraction, neither are you willing to grant, that the ſupream part of the Air, in the torrid and frigid Zone, maketh any refraction; I ſay, if that the two premiſed Reſponſes or Explications pleaſe not, then you muſt confeſs, that the Air in that place of the torrid Zone at that time was much higher than in our temperate Zone, and likewiſe more thick (or only the altitude diminiſheth the refraction;) but if that there be a great thickneſs, refraction is much more augmented by this, than it is diminiſhed by the altitude decreaſing. But I am moſt taken with the firſt of theſe three Cauſes, which maketh the altitude of the Air two miles, for we may not in the Horizontal refraction of 4 degrees 30 minutes, make a leſs in Nova Zembla: the other two are perplexed with many difficulties. Now why they beheld not the Sun for ſo many days, the ſame altitude remaining, after he ceaſed to riſe the third day of November; I ſay, that the cauſe was the thickneſs of the Air. The ſame answer muſt alſo be given, why the ſame Dutch Mariners in the year 1596, on the 30th of May, beheld not the Sun at Midnight under the elevation of 69 deg. 24 minutes, when that yet it was not under the Horizon 1 degree: Why here it made no refraction the cauſe may be the ſame. But we have been too large concerning this matter, which prolixity the Reader muſt aſcribe to the difficulty of the Doctrine: For to accurate knowledge of this matter, moſt accurate Observations are required; neither yet may we, if that the Observations made at divers elevations of the ſame Star on one place make not the ſame altitude, aſſert, that therefore the altitudes of it are diverſe: for the cauſe may be the diverſity of the rarity of the Air, viz. by how much it is nigher the Horizon, by ſo much it is leſs rare. If that this be ſo, the Observations will in no wiſe produce the ſame altitude, although it be the ſame; becauſe that we ſuppoſe in the Calculation, that the ſame rarity of the Air is in both parts of the Air; and therefore the ſame rule of Refraction.

Propoſition XXXI.

The depreſſion of the Star beneath the Horizon being given, when that it firſt beginneth to appear (that is, the Horizontal refraction of the Star, being given) to find out the leaſt altitude of that Air, as may be; the thickneſs of that Air for ſuch a refraction, and the greateſt exceſs of density (as may be) of that Air above the density of the Ether, that is the greateſt Rule that can be of Refraction. Alſo more generally, the refraction of a Star being given unto the given apparent altitude of it above the Horizon, to find the greateſt Altitude that may be.

So let the given Horizontal refraction $n f L$, or the depreſſion of the Star beneath the Horizon $g f S$, or $g L S$, when that it firſt beginneth to appear, ſuch as it was in Nova Zembla, 4 deg. 30 min. It is maniſeſt therefore from the Opticks, that if the radius $S f$ touch the Air in f ; that is, if that the Angle $N f T$ be ſtrait, then indeed that ray is not refracted; but if that no Star be beneath the Tangent $i n$, then no ray can immediately come near to f . Therefore it is required, that the Star ſhould be about the Tangent, and the Angle $n f T$ ſhould be leſs than the right Angle, or than 90. Let it therefore be ſuppoſed, that 89 deg. 59 min. (or 90 degrees) although very great, yet not greater than 90. Moreover, let $n f T$ the Angle given, or the Horizontal refraction 4 deg. 30 min. the Angle $T f L$ 85 deg. 29 min. is left, the greateſt which may be; whence, if that it cometh to paſs, that as the ſign $T f L$ is to the ſign $f L T$,

Of the depreſſion of the Star beneath the Horizon.

See Scheme.

ſo is $L T$ to $T f$: And the found out $T f$ ſhall be the leaſt altitude of the Air that may be; the fourth proportional $T f$ ſhall be the leaſt that may be, if ſo be that the middle bounds or terms, viz. the whole ſigns $T L f$, and $T L$, remain the ſame, if that the refraction $T f$ be not given to the apparent Horizontal ray, but to the altitude of the Star $\propto L g$. We ſhall act after the ſame mode in $\Delta, F L r T$.

Alſo the reaſon of the ſign of the Angle $n f L$, 89 deg. 59 min. to the ſign $T f L$, 85 deg. 29 min. ſhall be the greateſt reaſon which may be, of the density of the Air to the density of the Ether.

Propoſition XXXII.

The altitude of the Air, and one refraction of a Star in it, being given to a certain altitude of it, to find out from it the rule of refraction or proportion of the ſigns of the Angles of Incidency, to the Angles refracted, or to the thickneſs of that Air, for the given refraction at the given Altitude.

Now the given altitude of the Air ought to be greater than that, which according to the precedent Propoſition, is found to be the leaſt: For if that it be not greater; it is a ſign that the refraction is not obſerved, and that the Problem is impoſſible. Let therefore the $T r$ given be greater: for Example, let $\propto L g$ act the apparent altitude, let the known refraction be $m r L$; therefore in the Triangle $T L r$, is given $T r$, $T L$, and the Angle $T L r$. From theſe is found out $T r f$, the refracted Angle; unto which, if that you add $m r L$, you have the Angle of Incidency $m r T$, and the reaſon or account of the ſign $m r T$ to the ſign $L r T$ ſhall be found: This ſhall be the rule of Refraction in this Air, or the reaſon of the thickneſs of it to the density of the Air.

See Scheme.

Propoſition XXXIII.

The altitude of the Air, and Refraction being given to the one altitude of a Star, to find out the Refraction in another altitude of a Star.

For Example, Let the altitude of the Air $T f$ or $T r$, and the refraction $n f L$ at the apparent altitude o be given, viz. the Horizontal ray $f L$ is that refracted. Then let the altitude of the apparent altitude of the Star $r L g$ or $\propto L g$ be given. Let the rule of Refraction, or the reaſon of the ſign $n f T$, $T f L$, or the ſign $n f T$, $T f L$ be found by the precedent Propoſition. Then on the Triangle $T r L$, from the notes $T r$, $T L$; and on the Angle $r L T$ let the Angle $T r L$ be found. And as the ſign $T f L$ is to the ſign $T f n$: ſo is $T r L$ to the other ſign, which ſhall be that of the Angle $m r T$: from which, if that you take away $T r f$, the refraction $m r L$ demanded is left.

See Scheme.

The Ancient Opticks uſed another far more intricate, but yet a more falſe method.

Propoſition XXXIV.

The Altitude and Rule of Refractions of the Air being given, to find the refraction at the given apparent altitude of the Star, and thence the true Altitude.

This is the ſame with the former; becauſe in the former, from the given refraction at the given Altitude, that rule of Refraction was to be found. Examples for Exerciſe may be taken from the Table laid down before.

Of Refractions

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Of the Reflection of Light in the Air.

Proposition XXXV.

The Rays of the Sun and Moon having entred the Air, or Atmosphere, are not only refracted, but are also reflected or repercussed from the particles of the Air, as from a rough Looking-glass, by reason of the inordinate situation of the particles.

Of the Rays of the Sun.

For except the Rays of the Sun were reflected from the particles to our eyes, no part of the Air would appear lucid unto us, except that above, which the Sun is; and so the Sun being in the Oriental part, neither the Meridian or Occidental Air would be lucid: Therefore some rays being refracted, pass through by the Atmosphere; some are refracted here and there with many reflections from one particle unto another, and so they make the Air luminous or light.

Proposition XXXVI.

The reflection of the rays of the Sun from the particles of the Air, is the chief cause of the Twilight; that is, of the light before the rising, and after the setting of the Sun.

Chief cause of Twilight is the reflection of the Rays of the Sun from the particles of the Air.

It is manifest from the precedent Proposition: for as the Sun being in the East, his rays being ejaculated to the West, do reflect to our eyes, and so make the Occidental part conspicuous: so the Sun being beneath the Horizon, his rays sent forth into our Air are reflected to our Eyes and to the Occident, and from the Occident to our Eyes.

Proposition XXXVII.

The beginning of the situation of the Morning Twilight, that is, the Oriental Air is illuminated, and is so beheld, the Sun being depressed about 18 degrees beneath the Horizon: and the end of the Evening Twilight (that is, no more illumination appeareth in the Occidental Air,) is, when the Sun is depressed 18 degrees beneath the Occidental Horizon.

Of the Morning Twilight.

This Proposition dependeth on Experience and Observation, for if in the Morning season (that is, after the first and second hour after Midnight,) we diligently observe, our Eyes being turned towards the East, when that any bright colour sheweth it self in the Oriental Air about the Horizon, and that we know at that time the hour, and minute of the hour, we may thence know the depression of the Sun beneath the Horizon. Now we understand a serene Air, of which feeling that there is or may be a great difference; thence it cometh to pass, that some do extend the Twilight to the twentieth degree of the depression of the Sun beneath the Horizon; others unto the sixteenth: for by how much the Air is more thick, by so much the less will the light of the Twilight be discovered, contrary unto what we said, may happen in refraction.

Proposition

Proposition XXXVIII.

The Altitude of the Air, or matter, may be found from the quantity of the Twilight, which by reflection createth the light of the Twilight. And hitherto they have thought; neither doth the beginning of the Twilight arise from a simple, but at least from a double reflection.

See Scheme.

Let $T L$ be the Earth, g from the bound of the Air; L the place of the Earth in which the Twilight appeareth, or the light in the Horizontal Air; the incident Solary ray $f g$. Therefore Mathematicians, that have hitherto written concerning Twilights, say, that the ray incident on f , which maketh the reflection $f L$ to come from the very Sun S , and because that no ray can come from the Sun to f , so long as the Sun is beneath the Tangent $f h$; for Example in S , then its ray may come to f first, or because that they will have reflection to be made from f , as from an hollow Looking-glass; therefore $T f h$ ought to be equal to the Angle $T f L$: wherefore because that the Sun is found depressed 18 degrees beneath the Horizon, therefore the Angle $n f s$ shall be found 18 degrees, and $L f h$ 162, and $T f h$ or $T f L$ 81 degrees, and $L T f$ 9 degrees, whence $T f$ is found about 874 German miles, and the altitude of the Air 11 miles, as Clavius and Nonius make it. Albacen and Vitellio make it 13 miles.

This so great an altitude of the Air must in no sort be granted, when that other Phenomenons do repugn: Now that, it is found so great according to that method, that happeneth from a false hypothesis that they assume, viz. the ray $g h$, which maketh the reflected $f L$ to come from the very Sun: for this is false, because that it cometh by reflection from another ray; for Example, $g L$. Now that to make the small light in f , it is not necessary that the ray $f g$ should come from the very Sun, but another reflected ray may do the same, is proved from thence, that in the Occidental Air we behold the light before the rising of the Sun; when yet it is certain, that no direct ray then cometh from the Sun S to the Occidental Air m , but from another point of the Air; for Example, from f and o , and so the reflected ray $L m$ proceedeth from the incident ray $f m$, which very $f m$ is reflected from the incident $g f$, and this $g f$ from another $g L$, which perchance also cometh from another. Secondly, that also is worthy of note. That they have determined, that reflection is caused from the Air as from an hollow Looking-glass, the Center of whose cavity is T , viz. the same with that of the Earth, for this also is false, for the rays are reflected from the particles of the Air, no regard being had to the Center of the Earth, but according to the superficies of those particles. This is manifest from the ray $L m$, which slideth from the Occidental Air m to L , for if that it came from M as from the hollow-glass of the Center T , its incident ought to come from the quarter x ; but now it cometh from o , or between f and o : therefore the ray $L m$ is so reflected from the particle m , as the figure of it required. And there are in the Air particles of a most different figure, and therefore it is no wonder, if that divers reflections are here and there caused into all quarters.

Proposition XXXIX.

It being supposed, that the light of the Twilight is not generated by a simple, but by a double reflection, to find thence the altitude of the Air, which may more agree with other Observations.

In the former Proposition it is said, that that ray $g h$, which maketh the first reflection $f L$ in the beginning of the Twilight, cometh not from the Sun it self, but that it is also reflected in g ; let therefore its incident be $g L$ (which may touch the Earth in p , for so $L g$ is the first ray that can come to g ;) and thus we place to come now immediately from the Sun it self, yet by reason of refractions it may a little deviate, viz. let $Q L$ be the very ray it self of the Sun, $L p g$ the

See Scheme.

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the refract, $g b x$ the reflex, $f L$ the second reflex. The altitude of the Air $2 x$ is to be found out; because that therefore the ray $g l x$ is the refract of the incident $Q L$, let us suppose the refraction to be made 30 minutes, viz. the Angle $Q l x$: moreover, the Center of the Sun to be 17 degrees beneath the Horizon, when that the Twilight beginneth; therefore the Limbus of the Sun Q , which shall be distant beneath the Horizon 16 deg. 45 min. and 30 min. being taken away by reason of refraction; the Angle $K x$ 16 deg. 15 min. shall be the refracted depression of the Limbus of the Sun beneath the Horizon: And moreover, because that $K L$, $K p$ are equal, and also $f L$, $g p$, therefore $K g$, $K f$ are also equal, and the Angle $K f g$ is equal to the Angle $K g f$: Now both of them taken together are equal to the Angle $K g$, 16 degrees 15 minutes; wherefore $K f g$ is 8 degrees 7 minutes, and $f L$ is 4 degrees, and $E f L$ 86 minutes; whence is found that $T f$, 86 1/2 miles. And therefore the altitude of the Air is found 1 mile, which is far lesser than the Mathematicians formerly deduced from the Twilight; and it will yet be found far lesser, if that a threefold reflection be placed to make the beginning of the Twilight, which is not impossible; and this twofold or threefold reflection is more rightly admitted of for the cause of the duration of the Twilight, than that which Kepler alledgeth concerning the splendid matter in the vicinity of the Sun. See the other things concerning the time of the Twilight, and variation of Longitude, in the second part of this Book.

Proposition XL.

To find out the Altitude of the Clouds by a Geodetical dimension.

By a Geodetical dimension to find out the Altitude of the Clouds.

The Air being serene and quiet, let any point, or little Cloud more observable than the rest be taken, and measure the altitude of this, as the top of an high Tower, from two Stations; so that at the same time one Observer may be in one station, and the other in another, so you shall find the altitude of this Cloud, which is never found to exceed a quarter of a mile.

Proposition XLI.

To suppose the quantity of the Air, its altitude being given.

This is nothing else, but to suppose the space between the Earth and the outward superficies of the Air, which is easily, if so be that we know the altitude of the Air: For let the solidity of the Sphere be supposed, whose Semidiameter is composed of the Semidiameter of the Earth, and the Altitude of the Air; and from the found out solidity let the solidity of the Earth be taken away; that which is left is the solidity or quantity of the Air.

Proposition XLII.

The Air in some places hath some things peculiar.

Of Rains. In Egypt it seldom or never raineth.

Also in Peru.

So in Egypt it very seldom Raineth, or rather not at all; and if at any time a light Rain falleth, Catarrhs, distempers of the Lungs, Feavers, and other Diseases do follow. The inundation of Nilus, and almost a quotidian Drought in the Morning, do supply the stead of Rains. So in Peru, Rains are never seen. In many places under the Equator it raineth for an whole half year, and in the other half it is fair. See in the Second Part, Chapter the 26th.

The Island of Sumatra is for the most part covered with Clouds and Frogs.

The Air of Sumatra.

In the Island of Sumatra the Air is very heavy and cloudy, by reason of many standing Pools. The like is in many other places: as in Old Mexico, also in Ashkenaz, and the like.

The Isle of St. Thomas, lying under the Equator, is reputed to have the most unwholsom Air of all Regions, although that it abound in all Fruits.

In the Province of Chili the Air is so subtle, that a Sword sheathed in its Scabbard without any wiping, yet receiveth no rust.

In the Isles of the Azores the Air and Wind is so sharp, that it eateth plates of Iron; and the Walls, covered with the same, in a short space, and reduceth them to dust.

Aristotle relateth, that on Mount Olympus there is no motion of Air; (yet no Air at all, if that that be true which followeth); and that Characters written in the Dust, are found there after many years without any disturbance; and that those that ascend that Mountain cannot continue their lives; except that they carry moistned Sponges with them, by the help of which they breathe.

In America, when that the Spaniards passed through from Nicaragua into Peru, on the tops of the Mountains interposed, many suddenly died; or were frozen to death, with their Horses, like unto Statues, even unto the return of those that escaped. Some think, that a defect of Air was the cause; but that is not probable. Neither do I receive that for truth, which Aristotle writeth concerning Mount Olympus, because the contrary is found in higher Mountains, whose tops are covered with Snow. Whence we formerly conclude, that they are not above the Air, but that the Air floweth over them. Busbequius, an Eye-witness, declareth, that Mount Olympus in the Summer is also covered with Snow.

About the Isles of the Indian Ocean the Air is fragrant with the scent of the Odours, especially at that time when that Aromatics are mature. Mariners discover this scent when that as yet they are three or four miles distant from these Isles, viz. when that a Wind contrary to their course bloweth.

The Air of the Sea is more heavy than that of the Land; and less acceptable unto those that are not accustomed unto it: the difference is manifestly discerned when that Mariners approach near the shore; for by the distance of an whole mile they will discover how high the Land they are; by the very Air. Mariners relate this especially concerning Sossula, which is situated in the Oriental Coast of Africa.

When that I had printed these, I hapned by chance on a certain Observation made by David Fralichius on the Mountain Carpathus in Hungaria, which because it made not a little to the confirming our Judgment concerning the altitude of the Air, and the constitution of its Regions, I therefore have thought fit to annex it here, although it ought to have been adjoyned to the 18th Proposition. Of the Mountains of Hungaria, Carpathus (saith he) is the chief, by which vulgar appellation all the tract of the Sarmatian Mountains is denominated, which separate Hungary from Rutheni, the Polontians, Moravians, the Silesians, and that part of Austria which is on this side the Danube. Their more high and astonishing tops are in the Earldom Sepusla, at my Native Country, Casariopolis. Now by reason that they are almost covered with perpetual Snows, they are termed by the Sclavonians, Tetry or Tarczal, as it were the shaved and bald Mountains. And these Mountains, by reason of their roughness and precipices, far exceeding the Italian and the Helvetian Alpes, and those of Tirol, are almost unpassable, and are seldom travelled over, except by the Searchers of Nature. Now I my self (that I may relate this by the by) in the Month of June, Anno 1615, being desirous to try and discover the height of these Mountains (with two others of my Associates) when being on the top of the Mountain with great pains, I thought that I had attained unto the uttermost height, of a sudden another sublimer Mountain offered it self, unto which I arrived through vast and tottering Stones, which if moved falleth down towards the Valley, and that with so great a noise to the astonishment of the Passenger! After I was ascended, another more high was discovered by me, and so some lesser tops, the latter of which always exceeded the former in altitude, through so many Valleys was I forced to pass, with the great hazard of my life, until I had arrived unto the uppermost top of all; and when that I surveyed the Valleys beneath beset with

St. Thomas.

Chili.

Isles of the Azores.

See the Chapter of Mountains. The Authors relation of the Mountain Carpathus in Hungaria.

with huge Trees. From the declivities of the Mountains, I could observe nothing but an obscure Night, or a blewish colour, like unto profound Air; and it seemed to me, that if I should chance to fall from the Mountain, that I should not light on the Earth, but fall directly into the Firmament. For by the overmuch declivity, the visible Objects were extenuated and dulled. But whilst that I ascended a more high Mountain, I was pendent, as it were, amongst most thick Mists. Having overcome these, after the space of some hours, when that I was not far from the highest top of all, reposing my self, from aloft I beheld and discovered, that in those places, where I supposed my self before to be lodged amongst Mists, that there moved compacted and white Clouds; above which for some miles; and beyond the bounds of *Sepulchra*, I had a commodious prospect. Yet also I saw some Clouds higher, likewise some more low, and also some equally distant from the Earth. And hence I understood three things: 1. That then I had passed the beginning of the Middle Region of the Air. 2. That the distance of the Clouds from the Earth was not equal, but according to the mode of the Vapour, in some places higher, and elsewhere more low. 3. That the distance of the Clouds near the Earth, was far lesser than what some Philosophers do determine; and that not 72 German miles, but only half a German mile. When that I came to the highest pitch of the Mountain, I found the Air so calm and subtle, that I discovered not the motion of an hair; when yet notwithstanding, I had found in the more depressed parts of the Mountain a vehement Wind: whence I gathered, that the highest top of this Mountain *Carpathus* ariseth a German mile from its lower root or basis, and extendeth to the supreme Region of the Air, unto which the Winds ascend not. On the top I fired a Pistol, which gave no greater a Report at first, than if I had broken a small Stick; after a short space of time, a great rumbling or murmuring increased, and filled the lower parts of the Mountain, Valleys and Woods, like unto the report of a Canon: (here I feared, least that the whole Mountain being shaken, should have fallen with me;) and this noise continued for about half a quarter of an hour, until that it had penetrated the most obtruse Caverns, at which the Air being multiplied on every hand rebounded. And indeed such concave Objects did not prevent themselves on the top of the Mountain; therefore the sound at first was repercussed almost insensible, until that by descending it became more near to the Caves and Valleys, it more forceably struck against them. Also in these high Mountains, for the most part, in the midst of Summer it Snoweth or Haileth, when that it Raineth in the adjacent Plains; as I also my self have found. The Snows of divers years may be known from their colour and hard Crust.

Three things
observed by
him.

CHAP.

C H A P. XX.

Of the Winds in general, and the Quarters of the World.

A Certain affection of the Air is the *Wind*, and therefore the consideration of the same doth appertain to the absolute contemplation of the Earth, especially seeing that its cognition is required in *Hydrography*, and most of all in the Art of *Navigation*, which is a part of *Geography*: which although I grant more to belong unto *Natural Philosophy*; yet because that it containeth many things belonging unto *Geography*, therefore I shall briefly treat of the same here.

Proposition I.

The Wind is a commotion of the Air, sensible by touch, or with some force.

So I think it may be defined with the consent of all Nations: neither shall I here contradict some Conceited persons. If that the commotion be higher, it is termed an *Air* or *Breeze*; but if that the agitation be so small, that of it self it asserteth not the sense of Touching, then it is not termed a Wind: And the Air is never without such an agitation of particles, as a ray of the Sun let into a Chamber by a narrow passage, doth evidence; therefore we add the word *Touch* in the Definition, for that motion of the *Atoms* is only perceivable by the Eye.

Of the Wind.

Proposition II.

Most Winds tend from one quarter to the opposite quarter, and force Bodies with them.

This is perceivable both from the force of the *Winds*, or our *Bodies*; and also from the *Vanes* fixed on the top of the *Masts* of the *Ships*, which are extended by the Wind to the contrary quarter.

Winds force
Bodies with
them in their
motion.

Yet this is not done altogether directly and continually, but with some motion of the *Vanes* hither and thither. There are some that suppose, that we ought to have added in the Definition, A commotion made towards one quarter, or towards the same parts: But we thought these more fit to be omitted, seeing that also some circular *Winds* are found, and to speak properly, no *Wind* constantly observeth the same quarter.

Proposition III.

A Quarter is an imaginary point, which we conceive to be extended from any place of the Earth perpendicularly, towards one point of those which circularly stand about that place.

Such the true and common Notion seemeth to be; in the finding out of which I have not a little endeavoured: sometimes the *Points* standing about are termed *Quarters*.

Of Quarters.

Indeed the Explication of the *Quarters* doth not belong unto this Section of *Geography*, but unto the third, concerning the *Compleat Affections*; but because that the sorts or kinds of *Winds* are denominated from them, or these from the *Winds*, therefore here we shall anticipate that *Tractation*. Now this is the use of the *Quarters*, that seeing various things and appearances do appear in a various situation from ours, we may be able to explain the same.

Propo-

Proposition IV.

The Quarters are infinite in number, seeing that Plains may be drawn through every point of the Horizon; but only 32 have obtained peculiar appellations at this day, which are also common to the Winds, that blow from such Quarters.

But 32 particular Winds.

The *Quarters* are twofold (as also the *Winds*) *Cardinal* and *Collateral*; the *Cardinal* are those which pass through by the four circumstantial *Points* depending on the daily circumvolution of the *Stars*. Such are the *North*, *South*, *East* and *West*: by which names, both the *Quarters* and also the *Winds* are designed. For we say, the *North* and *South quarter* and *wind*, the *West*, *South*, *East quarter* and *wind*: and the *Winds* are called by one term *Aquilo* or *Boreas*, the *North-wind*; *Auster* or *Notus* the *South-wind*; *Eurus*, the *East*; *Zephyrus*, the *West-wind*. Those are collateral which stand between two *Cardinal Winds*, of which there are infinite. At this day are accounted only 28, viz. seven between two *Cardinal Winds*, as between the *North* and *East*, the *East* and *South*, the *South* and *West*, and the *West* and *North*. Of these intermedial ones, four are primary *Quarters* or *Winds*, viz. that are exactly in the middle between the *Cardinal* ones, and are distant from them 45 degrees, which are the *North-east*, the *South-east*, the *South-west*, and the *North-west*.

Proposition V.

These 32 Quarters are equally distant one from another, viz. every one from that which is next; whence it cometh to pass, that 11 degrees of the Horizon, and one quarter, do intercede between two quarters. The Cardinal Quarters are distant from one another 90 degrees.

The 32 Quarters are equally distant one from another.

For seeing that the *Horizon*, as a Circle comprehending all the *Points* about any place, hath 360 degrees, as all other Circles; if that 360 degrees be divided between 32 *Quarters*, every one shall receive 11 degrees 15 minutes; but if that they be divided amongst four *Cardinal Quarters*, every one of those *Cardinals* shall receive 90 degrees. Therefore the quarter from the *North* towards the *East* is the first, which is distant from the *North* towards the *East*, 11 deg. 15 minutes: the second, which is 22 deg. 30 minutes: the third, which is 33 degrees 45 minutes: the fourth, which is 45 degrees; this is in the midst: and so in the other *Quarters*.

The terms given to these 32, both *Quarters* and *Winds*, by the *Germans*, are most commodious; but are very difficultly imitated by other Tongues. Therefore you may see the order of the *Quarters* in the Table annexed with their degrees. We have also added the *Latin* and *Italian* appellations.

Proposition VI.

Now because as yet Intervals very great interceded between the two Quarters, from which the Winds may blow, and in which other Bodies are often placed, the situation of which unto our place we desire to know; therefore some cut twice every one of these 32 Quarters, and interplace one, so that they reckon 64 Quarters and Winds, which some Mariners observe in long Navigations.

The 32 Quarters, by some divided into 64 Quarters.

But *Mathematicians*, seeing that these do not sufficiently suffice to an accurate designation; they reckon so many quarters as there are degrees and minutes in the *Horizon*, and they denominate and design them by the number of the degrees and minutes by which they are distant from any *Cardinal quarter*; or by how much the *Arch* of the *Horizon* is intercepted between the

Cardinal

Cardinal quarter, and any point of the *Horizon*: so the quarter of the first degree, from the *South* towards the *East*, and the like. But in the *Sea-mans* observation of the *Winds*, so subtle a division ought not to be required.

Yet a Mode may be thought on, by which the 32 *Winds* may more commodiously be denominated, that it may be easie to the Tongue and Speech of all Nations, viz. if that they be named from the order in which they mutually follow from one *Cardinal quarter* to the other.

For Example; the first from *South* to *East*, or the first *South-East*; the second *North-East*; the third, fourth, and so on.

Proposition VII.

The Ancients both Greeks and Latins reckoned 12 Winds; or that we may speak more truly, they imposed names on fewer Winds; neither do they consent in these, but call the same Winds by divers names, which they took not from the Order, but from somewhat else. Whence there ariseth no small difficulty concerning their distribution of the Winds.

In time past amongst the *Grecians* only four *Winds* had names, viz. the *Cardinal winds*; *Eurus* blowing from the *East*, *Zephyrus* from the *West*, *Boreas* from the *North*, and *Notus* from the *South*. Neither doth *Homer* make any other mention of the *Winds*. Then at length unto these they added four others, to wit, of those that blow from these quarters: 1. In the quarter in which the *Sun* doth arise, when the *Winter Solstice* is between the *East* and *South*, which quarter is called the *Winter Solstice* of the *East*: and the wind is termed *Eurus*; for they call the *East-wind* it self *Subolanus*; but *Gellius* calleth it *Vulturinus*; and he will rather have the *Eastern wind* called *Eurus*. 2. In which the *Sun* setteth, which is called *Africus* and *Lybs*. 3. In which it riseth in the time of the *Summer Solstice*, between the *East* (*Eurus*) and the *North*, which quarter is called the *Solstitial* rising absolutely; and the wind is termed by them *Aquilo*. 4. In which he setteth in time of the *Solstice*; which quarter is termed the *Summer* or *Solstitial* setting of the *Sun*. This wind was termed by the *Grecians*, *Corus*.

The annexed Diagram representeth the Order of the *Winds*, according to the annumeration of *Seneca*, in the fifth Book of his *Natural Questions*.

The Greeks and Latins reckon fewer Winds than twelve.

See Lib. 5. of Seneca's Natural Philosophy.

Proposition VIII.

This designation of the Grecians is very inconvenient for Navigation, and other uses, which inconveniency they did not much discover; when for a long space they departed not from Greece in their Navigations.

For in places of a diverse Latitude, or of a diverse distance from the *Poles*, diverse also is the distance of the *Winter* and *Solstitial* rising from the quarters, *North*; *South*, and so on. Yet the *Grecians* retained it, augmented with other appellations of the four intermedial *Winds*, so that there were 12 winds, every one of which they designed by their proper terms; although that some others reckon otherwise. The *Latins* besides these twelve, added the names of twelve more, which blow between two of the former twelve; the following Diagram sheweth their appellations and order, in which the *Greek* winds are noted by Greater letters, and those which the *Romans* have interposed between every two, are noted by Lesser letters: yet *Seneca* noteth, that this inconveniency was long since observed by *Varro*, and that therefore he ordered these twelve *Winds* thus, that every two should be distant by equal distances, not having any regard of the rising of the *Solar* quarter; but in that *Seneca* affirmeth, that there are no more *Winds* than twelve, is false and ridiculous, for they are infinite.

B b

Proposition

Proposition IX.

Hitherto we have explained the distribution of the Winds taken from the quarters; and have also shewed, that both the divisions of the Ancient Grecians and Romans, is less adapted to the use of Navigation and Geography.

Therefore we deservedly retain the more recent distributions, which constitute 32 Winds blowing from quarters equally distant. Now those are called *Opposite Winds*, or contrary, which blow from quarters diametrically opposite: For we conceive the *Winds*, as coming from another place to our place; but we suppose a quarter to be extended from our place to another place.

Proposition X.

The Causes of the Winds are various; for seeing that the Wind is nothing else but a continued protraction of the Air, all those things which are able to effect such a protraction, will be the causes of Winds. Now they are these:

The Causes of the Winds are various.

1. The chief and general cause is the *Sun* it self, which attenuateth and rarefieth the *Air* by his fiery beams, especially that on which he sendeth forth his perpendicular rays, or over which he standeth; for the *Air* being rarefied requireth far more space. Thence it cometh to pass, that the *Air* being forced by the *Sun*, doth protrude the vicine *Air* with a great force; and when that the *Sun* is moved round from the East into the West, the chief force of the *Air* caused by him is towards the West. And a sign of it may be, that in many places of the *torrid Zone*, and every where in the *Sea*, a continual Easterly wind doth blow, viz. the *Sun* thrusteth forwards the *Air* from the East towards the West, and exceedeth not the *torrid Zone*. Indeed the rarefied *Air* is thrust forwards circularly towards all the quarters, *North, East, South, West*; but yet it is not admitted in all quarters: But the more vehement protraction is towards the West, because that the *Sun* moveth towards that quarter; therefore the wind is almost continually more sensible in the *torrid Zone* towards this quarter. But in our *Zone* for many days in the Morning before the rising of the *Sun*, and after that, where for the most part other Winds do cease. Of other quarters, some are sometimes more disposed than others to receive this force: therefore where the protraction cometh greater towards the North, the South Wind is said to blow; when that it is thrust towards the East, then the West Wind bloweth; when towards the South, the North, and so for other quarters. And it is to be noted, that when this protraction is made to any quarter lying without those four Cardinal Quarters, then in divers Regions a diverse Wind shall be seen: For although that that quarter be one in respect of the place unto which the *Sun* is vertical, yet in respect of other places it is diverse; and so the same cause maketh the same Wind to be termed by divers names in several Regions. Now this cause is either assisted or hindered by other causes; if that it be assisted, it maketh the Wind vehement; if it be hindered, it maketh it less vehement from that quarter, and oftentimes another Wind then bloweth, which is rather assisted by that general cause. 2. I make the second cause of the Winds, and that more frequently, *Exhalations* elevated copiously, and with a violence from the *Sea* and *Land*; but they scarce cause any Winds, except that when they begin to be rarefied. 3. The attenuation and rarefaction of the *Clouds* and *Mists*, whether that is be caused by the *Sun*, or from other Stars; or whether from included or adjoynd fires, or *sulphureous particles*. 4. The dissolving of *snow* and *Ice*, especially of that which lieth on Mountainous places, and are not wholly dissolved into water. 5. The various situation and rising of the *Moon* and the other Stars. 6. The condensation and rarefaction of the *Air* and *Vapours* by any heat or cold. 7. The descent of the *Clouds*, by which the subjected *Air* is pressed.

The

The consideration of the *Aeolopila* conduceth much to the more easie understanding of these causes, into which the water included, fire being put to it by an arrow orifice, sendeth forth the winds with a great force, until that all the water be exhale. Now these retain the place of a narrow orifice in the Air; 1. The more dense circumstantial Air. 2. If that the same vicine Air be forced by, or prohibited to give place by other Vapours or Mists. 3. If that the Air be more condensed towards one quarter, and so layeth open a way to Blasts.

Proposition XI.

Why the Winds blow so that they make a perpendicular line over the Horizon; or why the going forth of the Winds is perpendicular to the Horizon.

The cause is, by reason that the *Air* in a Spherical figure doth encompass the *Earth*, and the protrusion of the *Air* is made for the most part through the greatest circle of the *Sphere*, which passeth through the Center of the *Earth*: for although we may suppose the *Air* to be forced according to a transverse line, yet because that there is a lesser force from the sides, and greater resistance; thence it cometh to pass, that the winds incumb into the midst of the passage. But we shall more commodiously conceive this mode, if that we do but consider the first cause of the winds: for the *Sun* thrusts forwards the *Air* towards all the quarters of that place, unto which it is vertical; but that force is not received in all, as I have said. If that now we consider the great Circles drawn from that place, and amongst these, those in which the *Air* is thrust forwards, all those places of the *Earth* seated in this circle or semi-circle, shall find the wind falling down perpendicularly, by reason that every great Circle of the *Earth*, passing through any place of it, is perpendicular to the *Horizon* of that place. The same is the reason, if that at any time the wind breaketh forth from a thick Fog, or dissolved Clouds; but those places that are situated without these Circles, feel not the wind, although that the *Air* be moved above their *Horizon*; because that it is not perpendicular to that *Horizon*, but oblique.

The winds so blow, that they make a perpendicular line over the Horizon.

Yet it is not general, that the wind proceedeth in a perpendicular way to the *Horizon*, because that oftentimes in the *Air* transverse Blasts are found. So we see, that Smoke coming forth of a Chimney, is not carried by the wind towards one quarter, but part of it is carried unto other quarters.

Proposition XII.

Why the Winds blow by an interrupted force, so that sometimes they cease, and other some, as it were, with redoubled strength they return with the greater importunity: And why that they seem more continually to blow on the Sea, so that it is discovered less calm.

I suppose the reason to be, that the cause that moveth or stirreth up the Winds, continueth not always, but that some space is required unto the collection of such a quantity, which by such a vehemency may break through the *Air*; and therefore, because that *Exhalations* are more continual in the *Air*, and the motion is less impeded, there the calm in the *Ocean* is less discovered, although that it be not wholly removed.

The winds blow by an interrupted force.

Proposition XIII.

Why no Wind bloweth perpendicularly from the Air unto the places of the Earth.

See Aristotle, lib. 2. chap. 9. of Meteors.

Concerning this question, Aristotle in his Second Book, Chap. 9. of Meteors, treateth very absurdly; so that the Peripateticks are not agreeing concerning his Opinion: neither shall I in this place relate their Sentiments. The cause seemeth easily to be explained; *viz.* that the Air being thrust downwards towards the Center of the Earth, cannot break through this way, by reason that other vapours are expelled or born upwards; and therefore the overmuch resistance of the Air, which is directly situated under the Air moved, causeth the protrusion to be made to the sides of the place in which the violence beginneth. Which is therefore the more probable, seeing that the matter of the Wind is for the most part more light than that Air, and that is more rarified than that which is more near unto the Earth.

Proposition XIV.

Why Westerly winds are less frequent than Easterly winds.

See Proposition 10.

The cause of this is manifest from the Tenth Proposition, where we have made the Sun to be the first cause of Winds, who so rarifieth the Air proceeding from the East to the West; and therefore the Air is more thrust towards the West. Therefore that this general cause may be impeded, of necessity very many & various causes must consist in the Western-quarters, which doth happen less frequently.

Proposition XV.

Why the Northern and Eastern winds are more impetuous and stormy; and on the contrary, the Southern and Western more relaxed and weak.

The Northern and Eastern winds more stormy, than the Southern and Western.

The cause is by reason that the Northern Air is more thick, by reason of Cold; and the Southern (in our Zone) by reason of the greater diffipation caused by the Sun and Heat is more rarified. Now by how much the Air is more rarified, by so much the less is it carried with an impetuous force. Yet you must know, that the South-winds are cold, dry and violent in the Temperate Zone or the Arctic Zone, opposed to ours, no less than the Northern-winds are unto us; but the Eastern-wind is more rigid, or more intense for another cause, *viz.* because that it ariseth for the most part from the refraction of the Air, made by the Sun, which being continually carried from the East to the West, the Air also is thrust forwards with the greater violence from the East to the West. But it is probable that other causes may accede, that may either help or obstruct that violence.

Proposition XVI.

Why the Southern and Western winds are found more hot than the Eastern and Northern, which have a wonderful power of cooling Cold in respect of them.

The Southern and Western winds are found more hot, than the Eastern and Western.

So this Question is wont vulgarly to be propounded; yet we must know that it must not generally be understood of all places, but only concerning the places of our Zone: For in the other temperate Zone situated towards the South from the Equator, the contrary holdeth true; because that in these places the Northern-winds are hot or warm, and the Southern are found more cold. And so the nature of the thing, and the condition of the cause required:

For

For the reason why the South-wind is discovered more warm to us, and the North more cold, proceedeth hence, *viz.* that the South-winds come from a quarter and places more near unto the torrid Zone, or way of the Sun; but the Northern places more remote from that way of the Sun, that is from more cold places. But the contrary is found in places situated towards the Antarctic Pole from the Equator, because that the Northern-winds approach to them from the way of the Sun, the Southern from the places more near the Pole.

But as concerning the Eastern and Western winds, I must answer otherwise, neither doth the diversity of the places of our Zone, and that of the opposite, here take place. Therefore first, it is said in the preceding Proposition, that the Western-winds are less frequent in all places; the cause of which is the same with that, by reason of which the Occidental winds are discovered more warm, *viz.* because that for the most part they blow in the Night, and after the setting of the Sun; where the Air that is thrust forwards towards our place, is more cold or less rigid, than the Air of our place, which is more remote from the West, than that which lieth between the Sun and our place. There is also another cause (which also is of force in the difference between the Northern and Southern winds) *viz.* that the Western-winds blow with less violence, and not so intense, but with some relaxation. Now it is known, that any Air of Wind is discovered so much the more cold, by how much it bloweth with the greater or more intense force, although in truth it be no hotter or colder, which is evident by our expiration, which we can exhale either cold or hot.

Proposition XVII.

Why Mariners from the sight of a Cloud, especially such a one that is of a pale or dusky colour, predict a wind from that quarter: also to declare the other signs of future winds.

A twofold Reason may be rendered; for either Clouds of that colour do shew, that by and by they shall be dissipated and dissolved into Blasts; or else the Clouds sinking by their own weight, and segregated from other Clouds, press down the Air beneath them, and so cause it to blow. Concerning the peculiar Cloud, termed by the Dutch the Bull-eye, see the following Chapter.

1. The Sun appearing spotted in his rising, and lying obscured under a pale or black Cloud, foretelleth either showers or winds. 2. If that the Sun at his rising appeareth concave, so that it shineth from the middle and sendeth forth rays, it signifieth a moist and windy season. 3. If that the Sun be pale in his setting; but if it be red, the Air will be quiet and serene the next day. 4. If the Sun being pale setteth in black Clouds, it signifieth a North-wind. 5. If that the Moon be red like unto gold, it is deemed a certain sign of a Wind, according to the Vesse,

Pallida Luna pluit, rubicunda stat, alba serenat.

6. A circle about the Moon. 7. If that the Northern-horn or corner of the Moon appear more extended, a North-wind is approaching. 8. If that the Southern, a South-wind is at hand. 9. The rising of the Moon, and the more noted Stars; as of the Bear, Orion, and especially the Goats, with the Sun. 10. If the small Stars in Cancer, termed *Astelos*, be covered with a Cloud, if the Northern of them be covered, the Wind will be South; if the Southern be covered, it will be North. 11. For the most part Winds begin to blow, when that the Wind ceaseth. 12. When a certain noise and murmur, like to an Ebullition, is heard in the Sea. 13. The Ancients also prognosticated from the Raven, the Dolphin, and other Animals. 14. From fiery Meteors, as from Lightning and Falling-Stars; but not from the *Ignes fatui*.

Propo-

Proposition XVIII.

Why in the Spring and Autumn the Winds are more frequent, and blow with greater force, than in the hot Summer or cold Winter.

Greater and more frequent winds in Spring and Autumn, than in Summer and cold Winter.

In the *Spring* it is supposed to be partly by reason of the dissolving of *Snow*, especially in Mountainous places; partly, because that the Pores of the *Earth* are then opened, and send forth many exhalations: partly, because that the *Air* and Vapours are then more thin, when that they were condensed in the *Winter*. Add, that for the most part in the Month before the beginning of the *Spring*, and in the very *Spring*, many Rays do fall, by reason that humid Constellations then have possessed those houses of the *Zodiack*, into which on the entrance of the *Sun* we account the beginning of the *Spring*; and also in *Autumn* the frequent Rays and Exhalations are to be accounted the cause of the *Winds*, as well as in the *Spring*, by reason that a moderate heat proceeding from the *Sun*, advanceth the Vapours and Exhalations; yet such as are more thick and less attenuated. But in the heat of *Summer* there are no *Winds*, for the most part, for the same reason, by reason of which Rays are very seldom seen at that Season, *viz.* because that the *Sun* overmuch attenuateth the Exhalations, and doth not permit them so to conjoin or meet in such a quantity, as is required to the generation of the *Winds*. Which cause is not general or always true: and neither is it generally true, that in the heat of *Summer* there are no *Winds*; for here we are only to understand it concerning that which oftentimes happeneth: But in the sharp *Winter* the winds are more rare, and that by reason that both fewer Vapours are raised from the *Earth*; and those also that are elevated, are either condensed into Clouds, or are so dissipated by *Frost*, that they cause no wind.

Proposition XIX.

In what Altitude of the Air, or in what Region of the Air the Winds begin to blow.

In what Region the winds begin to blow.

There are some that suppose the winds not to exceed the lower Region of the *Air*, because that they discover, that the tops of the high Mountains, as *Olympus*, feel no Blasts. But I question the Observation, seeing that the Smoak cast forth from the top of Mount *Aetna*, is discerned to be moved to and fro by the wind: therefore I suppose, that such a windy commotion may be caused also in the upper Region of the *Air*.

Proposition XX.

Unto what space one and the same Wind may extend itself.

How far one and the same wind may extend itself.

There is great diversity in this matter; for the winds blowing from the East to the West, under the *torrid Zone*, seem to encompass the whole *Earth*: and those also that blow either from the North or South, for many days and long spaces, are wont to accompany and follow *Mariners*. The same seemeth true concerning collateral Lines; but this diversity is, because that the same wind is different in divers places, as we have shewed in the *Tenth Proposition*, in the end of the explication of the first cause.

CHAP.

C H A P. XXI.

Of the Winds in particular, and Tempests.

IN the foregoing Chapter we have alledged the distribution and differences, or rather the denominations of the *Winds*, which they receive from the quarter from whence they blow, or seem to blow; which division also is accidental, by reason that they are taken in respect of a certain place of the *Earth* unto which those Quarters are related. Now in this Chapter we shall alledge the divisions and *Phenomena* which are in a certain time of the year, or else are proper to certain tracts of the *Earth*, although that we desire to have more, and those likewise more accurate Observations concerning these things. But we will produce what we have collected with much labour from the *Diaries* of the *Seamen*.

Proposition I.

One Wind is constant, and another inconstant.

That is a constant wind, which at the least for one or two hours bloweth from the same quarter.

Of Winds constant and inconstant.

That is an inconstant wind, which sometimes bloweth, and other some is changed into other winds blowing from other quarters.

The causes of the more or less duration of the same wind, also of the swift immutation seemeth to be, 1. if that it be from a general cause, or from a cause less constant. So Winds proceeding from the motion of the *Air*, with the motion of the *Sun* in the *torrid Zone*, are constant: so those also that blow from the dissolving of the *Snow*, especially in the Mountains. 2. If that by chance there be no such vapours in other quarters, which are apt to generate Winds. 3. If that the circumambient Air about the Cloud, of which the Winds are generated, be more thick, and granteth no passage to the Exhalations: but if that the Air be not so thick, or more relaxed, and that few Vapours be here and there in divers places and quarters; and lastly, if that the general causes do cease, then indeed the Winds are found variable, which are for the most part gentle.

Proposition II.

One Wind is general, and another particular.

The general Wind is termed by *Mariners* a *Passant wind*, which at many places at once, in a long tract of *Earth*, bloweth on the Sea almost for a whole year. That is termed a particular on the contrary, which bloweth not at once in many places for a whole year.

Of general and particular Winds.

Now a general Wind is hindered, 1. In the parts of the Sea near the *Earth*; for here Vapours from other quarters do interpose or force in; and therefore a general Wind is considered, especially in the midst of the Sea, most remote from the Land. 2. Yet another wind may also blow in the midst of the Sea, *viz.* if that in another a Cloud, or other cause generating of a wind, be very great. From these two Causes it happeneth, that a general wind is less or more constant, or continual in divers places.

Now the general winds are only found in the Sea of the *torrid Zone*, or that which lieth between the *Tropicks*, about the whole *Earth*; yet in some places it extendeth itself without the *Tropicks* the space of 7 degrees, and they are called *Eastern*, that is, the East-wind or collateral to the East, as the *South-East*, *North-East*, *viz.* which blow from the East towards the West

for

for the whole year. But they do not consist with the like constancy in all the parts of that Sea; but in some they are more hindered, and in some less. They are more constant in the *Pacifick Ocean* (*viz.* in that part of it which lieth between the *Tropicks*;) so that Ships that loose from the Port of *Aguapulco* in *New Spain*, in *America*, towards the *Philippin Isles*; that is, such as steer their course from the East to the West, oftentimes for 60 degrees Sail continually, without any alteration or furling of the Sail, with a constant East, or North-East wind; neither unto this day hath any Ship in that most long Voyage (of 1650 miles) been cast away. Whence the *Mariners* say, that they may sleep securely in this Voyage; neither is there any need of guiding the Ship, seeing that the general Wind bringeth the Ship to the wished Port: for here other winds do impede the general Wind. The same constancy of this same *Easterly wind*, is found in the Sea from the Cape or Promontory of *Good-hope* in the bounds of *Africa*, or rather from that procurent part of *Africa* which lieth in the *Torrid Zone* even to *Brazil*; in the midst of which Voyage lieth the Isle of *St. Helena*, unto which *Mariners* returning from *India* unto *Europe*, are wont to direct their Course. The Isle of *St. Helena* is distant from the Promontory of *Good-hope* 350 Miles, and is oftentimes accomplished in sixteen days, or also in twelve (as the general wind is either vehement or slack, for in this there is not a perpetual likeness) the *Sea-men* using the same security (when that they have first sailed to the Parallel of that Island, for the Promontory of *Good-hope* lieth without the *Tropicks*) which we have said that they use, who Sail in the *Pacifick Ocean*, from *Aguapulco* to the *Philippins*: yea, when that they have passed the Promontory of *Good-hope*, they judge themselves to have escaped all danger and variation of the winds, and sleep securely, the wind constantly filling their Sails towards that Island and *Brazil*: But yet this only is their great care, that they may not Sail beyond the Island, seeing that it is a very small one; for if that they have passed it the eighth part of a mile, they cannot regain it, *viz.* an *Easterly wind* forcing them towards the West: therefore then they are forced with great loss of their Voyage to make to the Coasts of *Brazil*, or the other Isle called *Ascension*, to water at. If then you demand by what course they Sail, when that the Ships make a contrary Voyage in this Sea, *viz.* whilst that they steer from the *Philippin Isles* unto *New Spain*, or from *Brazil* and the Isle of *St. Helena*, unto the Promontory of *Good-hope*, whilst that they Sail from *India*; in these Voyages the Reader must know, that *Mariners* use a threefold mode; for either they navigate the Sea situated without the *Tropicks* (therefore they do not touch at the Isle of *St. Helena*, whilst that they Sail from *Europe* into *India*) or where necessarily they must pass by this, they do not directly steer their course from the West to the East, but obliquely from the North, the *Collateral quarter* of it, to the South or the *Collateral quarter* of it: or lastly, they choose such a time of Navigation in which they know, that that general wind is impeded often by others. But this latter, because that it happeneth rarely, therefore they rather make choice of the two former Modes, of which we shall speak more in the Chapter of Navigation.

Therefore there are two Seas of the *Torrid Zone*, in which that general *Oriental wind*, with its *Collaterals*, reigneth throughout the whole year, *viz.* that which lieth between the procurent of *Africa* and *Brazil*: the other is that which is extended between *New Spain*, or rather between *America* and the *Oriental Islands*, of which the *Philippins* are a part. The third part of this Sea under the *Torrid Zone*, *viz.* between the Procurent of *Africa* and the *Philippins*, or *Oriental Islands*, is not indeed destitute of this general wind; but oftentimes it is hindered in this Sea, by reason of the frequency of *Islands*, which hindrance yet in some places is more frequent than in other some. Between *Mozambique* and *India*, the general wind is of most force in *January*, *February*, *March*, *April*; in other Months other winds do blow, of which we shall speak in the following Proposition. This general wind is more hindered in the Sea of the *Indian Isles*. At the Isle of *Banda*, in the Month of *May*, the *Oriental winds* begin to be prevalent, being very violent,

violent, and accompanied with rain: at *Malacca* in *September*, and in other places otherwise, as we shall shew in the following Proposition.

Yet this you must know, that this general wind doth not equally extend itself in these Seas towards the *Tropicks* in all parts, but that there is a great difference in this. For the *Tropicks* are distant from the *Aequator* on both sides $23\frac{1}{2}$ deg. but the general wind may be discovered in one *Meridian* unto the Latitude of 20 degrees, in another *Meridian* unto 15, in another unto 12.

So in the *Indian Ocean*, when in the Months of *February*, and *January*, the East wind, or South, or South-East bloweth, it is not discovered until you come to the 15 degree of Latitude. So unto those that Sail from *Goa* unto the Promontory of *Good-hope*: here a general wind meeteth them at the 12 deg. of South Latitude, and at the 28 degree of the same Latitude accompanieth them.

So also *Mariners* have observed that no general wind bloweth between the 4 degree of Northern Latitude, even unto the 10, or 11 deg. between *Africa* and *America*; for when they have Sailed by that wind from *St. Helena* towards the *Aequator*, even unto the 4 deg. of Northern Latitude; then are they destitute of that wind, even until they come unto the 10 degree of Latitude. And from that degree, even unto the 30, the North-East is again manifestly found continually to blow, although that the 30 degrees be 7 degree from the *Torrid Zone*. Yet notwithstanding in the 6, 7, and 8. degree of Parallel Latitude it also bloweth in some places, but in all places almost in the Parallels of the 10 deg. even unto the 30 deg. North. After the same manner beyond the *Tropick of Capricorn*, in the Sea between the Promontory of *Good-hope* and *Brazile*, the South-East wind bloweth even unto the 30 deg. of Latitude, that is 7 degrees beyond the *Torrid Zone* towards the South, and that through the whole year.

And although as we have said, that this general wind is not discovered on all Coasts, much less in *Mediterranean* places, yet in some it is sufficiently observable. So on the Coasts of *Brazile* Easterly unto the Coasts of *Loango*, the South-East is a Quotidian wind, although that other winds do admit themselves.

There is a threefold Cause of this continual general wind alledged by Modern *Philosophers*, (for both it, and the *Torrid Zone* were unknown to the Antients, who have not so much as mentioned it). Some Determine that the Sun is the cause of this wind, blowing from the East to the West; by reason that by its great faculty it rarifyeth the Air in the *Torrid Zone*, and so it thrusteth it forwards from the East to the West, seeing that the Sun it self goeth this way.

Some and those of the Opinion of *Pythagoras*, that Determined the Heaven to stand still, and the Earth to moved round; some of them I say, supposed this general wind to Proceed from hence, *viz.* that whilst the Earth is moved round, and the Air with it; this less followeth the motion of the Earth, but is somewhat more slower to motion: and therefore whilst that we are carried with the Earth from the West to the East, the Air moved with less celerity to the same quarter, seemeth to meet us, and to be moved from the East to the West, when that yet we do rather meet it.

Des Cartes alledgeth the third Cause, and that altogether new in the 222 Proposition in his *Principles*. Where he endeavoureth to shew that the Moon causeth this motion, as well as the motion of the Sea from the East to the West. But because that his Opinion cannot be understood, except that all his *Philosophical Hypotheses* should be Explained; therefore we shall say nothing concerning it here, especially seeing that we shall shew in another place, that that Cause is not true. I approve of the first Cause; the second seemeth therefore not to be received, because that many *Copernicans* approve not of it; and no reason can be given, why this wind should be found to blow only between the *Tropicks*, or to the 30 deg. of Latitude, and not in the whole *temperate Zone*.

See Proposition 203.

See Des Cartes in his 222 Proposition of his Principles.

Proposition III.

Some Winds are Periodical and fixed, others wandering and Erratick.

Some winds fixed, others wandering.

Those are termed fixed, and periodical, which blow on certain daies, and then cease for a certain number of daies, until that they begin to blow again. Some return in the space of half a year; other some are Monthly, which return in the interval of one or two Months. Also the fixed winds are otherwise subdivided, *viz.* some when that they begin to blow, continue for some Months, others for half a year, others for a Month, others for a few daies.

Amongst these those are chiefly observed by *Mariners*, which blow for some Months in certain places of the Sea, (and they call these winds, as also the times wherein such winds blow, *Motions*, or *Moussons*.) And such Motions are more especially notable in the *Indian Ocean*, from *Africa* to the *Philippine Isles*, although that they be not wanting in other places: there is a very great moment to be placed in the observation of these Motions; for *Seamen* ought to choose the time of them for the Voyage that they intend to that same quarter, (or that which is collateral unto which that wind bloweth;) neither to undertake a Voyage to the quarter of this Motion, but to expect the contrary Motion. For in the parts of the *Indian Ocean*, where that one wind ceaseth to blow for some Months, another succeedeth contrary to the former, and continueth with the same constancy, until that it hath compleated its time, and therefore they call these, Contrary Motions. They term those the time of the mutation of those Motions, which intercede between the end of one *Mousson*, and the beginning of the contrary. For one Motion ceasing, another doth not presently begin to blow, but some days fall between, some times more, sometimes fewer, also more in some places, and fewer in other some. And in these intermedial daies, in which no certain Motion bloweth, the wind is variable; the calm dangerous, and for the most part the Sea is tossed with uncertain waves, and sudden Tempests arise: some of these Motions return twice in a year, but not with the same vehemency, whence *Mariners* term the one the great Motion; the other the lesser.

Months most fit to take a Voyage from Europe to India.

In that part of the *Atlantic Ocean*, that lyeth in the *Torrid Zone*, as also that which is in the *Temperate Zone*, the North wind perpetually bloweth in the Months of *October*, *November*, and *January*. And therefore these Months are chiefly fit to undertake a Voyage in from *Europe* to *India*; that they may pass the *Equator* by the help of those winds. For it is manifest by experience, that some Ships that have set Sail from *Europe* in *March*, have arrived no sooner at *Brazile*, than those that have set Sail in *October*; *viz.* both of them have come thither in the Month of *February*, being helped by the North wind. Yet because that this wind is not so continual and certain, therefore *Mariners* are not wont to call it a Motion. Neither is it an easie matter to render a cause of this wind in these Months, unless you will refer it to copious thick vapours, or to a continual pressure made from thick Clouds. But those that have wintered in *Nova Zembla*; testify that there is a most frequent North wind all the time of the *Winter*, where this effect cannot be ascribed unto the *Sun*, rarifying the *Air*, seeing that he lyeth obscured under the *Horizon*. Yet I suppose that in general the Cause may proceed from the dissolving of *Snows* or gross *Vapours*, or *Clouds*, collected in the *Winter* in the Northern and Southern places, especially on the Mountains. Which I am induced to believe by this Argument more especially, because that these Motions blow for the most part from the North and South quarters, or the Collateral unto them. Therefore by reason that *Snow* and thick *Clouds* are dissolved in the Northern places by the *Sun*, especially in that half of the year in which he passeth through the North part of the *Ecliptick*; therefore those Motions shall then be Northernly. After the same manner in the Southern

Southern

Southern or *Antartick* places for the other half of the year, the *Sun* dissolveth the *Snow*, and the thicker *Clouds*, therefore then the Motion shall be discovered Southerly.

Now that these Motions blow more from the *Sea* in the Collateral quarters, to *wit*, In the South-East, and North-East, or in the quarters more near to the North, and South; its cause seemeth to be referred either to the divers situation of the places, in which the *Snow* and the more thick *Clouds* are there collected, or rather unto a general wind, which is very forcible to attract those Motions unto another quarter. For seeing that a general wind of its own nature tendeth directly from the East, to the West, and these Motions tend from one *Pole* unto the other, thence ariseth a mutual hindrance; and thence it may come to pass, that the wind may gain an intermedial quarter between the East and South, and East and North. The South-West, and North-West Motions are unconstant, rare, and weak; and therefore are scarce reckoned amongst Motions, when that the North and South by accident seem to decline sometimes to the West, but they are attracted to the East by a general wind. Now to render a reason concerning the great diversity of these Motions in divers places, more accurate observations are required, and those not of one year but of many, with the notation of the *Winter*, *Rainy*, *Snowy Seasons*; and the Mountains of these places from the quarters of which these state winds do blow; we should also know the *Phasis* and Motion of the *Moon*, and what variation this maketh.

2. In *July* South winds blow at *Cape Verd*, (for then there is the *Winter* in the time of Rain) and this seemeth to produce from no other Cause than that, by which in our *Zone* North winds blow in the *Winter*.

Several winds blow according to times in set places.

3. At the Promontory of *Good-hope*, in *September*, the North-East wind bloweth.

4. At *Patanen* in *India*, in *November*, *December*, and *January*, continual Rains, and a North-East wind predominateth, but in other Months an East wind bloweth, and it is *Summer*.

5. About *Sumatra*, there is a mutation of the Motions in *November* and *December*.

6. In the Isle of *Mayo*, one of the *Azores*, in the end of *August*, a vehement wind bloweth from the South and bringeth Rain, which moistens the Earth, otherwise dry, and then first of all Grass springeth up, which feedeth many Goats at the end of *December*.

7. In *Congo* from the middle of *March*, to *September*, (at what time it is *Winter* there) the North and North-West wind blow, or other intermedial winds, which force and gather the *Clouds* on the tops of the Mountains, and generate an obscure *Air* with Rain. But from *September*, to *March*, the South and South-East and other intermedial winds blow that are contrary to the former. We have taken these differences of the state and Anniversary winds, from the Observation of *Mariners*, that term them *Moussons*, or Motions, if that they blow in a long tract of the *Sea*. And now we should Treat of their Causes, but that we are ignorant of the Mountains of the *Regions*; of the times of the *Snows*, and their meltings, and many other matters. Moreover those Observations of *Seamen* are not sufficiently accurate, so that they deserve a diligent inquisition concerning their Causes.

See the following Proposition.

The more noted Motions are these;

1. In the *Indian Ocean*, between *Africa* and *India*, and to the very *Moluccos*, in an *Oriental* Motion towards the West, which begineth in *January*, and bloweth for six Months, even to the beginning of *June*: In *August*, and *September*, a contrary Motion begineth, *viz.* Western winds. In *June*, *July*, and *August*, is a mutation of Motions, and great Tempests from the North. Now when that we speak of *Oriental* and *Occidental* winds, we do not only understand the East and West winds, but also the Collateral winds.

More noted Motions.

2. The *Oriental motion* varieth very much at the Shoars, so that Ships can only Sail from *India* on this side *Gatu*, or on the Coasts of *Malabar*, from *January* to the middle of *May*, to *Persia*, *Arabia*, *Mecha*, and *Africa*: for seeing that in the end of *May*, and all *June*, *July*, and *August*, the *Tempests* rage violently, and often a *North* wind, or furious *North-East* wind frequently intermixing it self: therefore in these Months no Ships pass from *India* on this side *Gatu*: but on the Coast of *India* beyond the *Gatu*, or *Ganges*, that is on the *East quarter*, or on the Coasts of *Choromandel*, such *Tempests* are not known. A Voyage is undertaken from *Ceylan*, *Java*, and other Isles, to the *Moluccoes*, in *September*, because that then the *Oriental motion* beginneth, which hindereth the general wind. But when you depart to 15 degrees of *South Latitude*, beyond the *Equator*, this *Occidental motion* is not discovered in the *Indian Ocean*, but a general *South East* wind filleth the Sails.

3. From *Cochin* to *Malacca*, that is from the *West*, to the *East*, they begin their Voyage in *March*, because that then there the *Western motion* beginneth, or rather the *North West* wind frequently bloweth.

4. In the Kingdom of *Guzurat*, half the year the *North* winds blow from *March* to *September*, and in the other half the *South* winds, and that without any other hindrance caused by other winds.

5. The *Dutch* set Sail from *Java* for the most part in *January*, or *February*, when that they return for *Europe*: then they Sail with an *Easterly* wind even to 18 degrees of *South Latitude*: and here the *South* or *South-East* wind beginneth to blow, by which they Sail even to *St. Helena*.

6. Although in the *Indian Ocean* from *January*, even to *June*, the motion be *Oriental*, and then from *August* to *January*, the motion be *Occidental*; yet nevertheless in divers parts of it, when we must Sail from one place to another, divers seasons are discovered more or less convenient, by reason that the *Collateral winds* do more or less blow, or the motion is more or less vehement at those times, or other winds more often or more seldom intermix at that time: therefore those that are to Sail from *Cochin* to *Malacca*, observe another motion; another from *Malacca* to *Maccon*, the *Emporium* of *China*, another from *Maccon* to *Japan*.

7. At *Banda* the *Western* winds cease with the end of *March*, and at the end of *April* there are variable winds, and calms: with the Month of *May*, violent *Easterly* winds with *Rain* begin.

8. At *Ceylan* about the Promontory called *Punto Gullo*, on the 14th. of *March*, the first *Occidental* wind beginneth, viz. the *West-South-West*, then the *South-West* constant and continual from the end of *March*, to the first of *October*: then the *North-East* beginneth, which bloweth there even to *March*, but some daies at ten, or also more, these *State-winds* or motions happen sooner or later.

9. In the Voyage from *Mozambique* to *Goa*, in *May*, and *June*, the *South-East* winds are predominate even to the *Equator*, but from the *Equator* to *Goa*, the *South-West* and *South* winds reign in *July*, *August*, and the following Months.

10. In the 35 deg. of the *Elevation* of the *Meridian* which passeth through the Isle of *Tristan de Conha*; in *May*, on the *New Moon* the *West* wind reigneth.

11. At the 2 $\frac{1}{2}$ of *North Latitude*, in the *Sea* seventy miles from *Guinea*, a *South-East* wind predominate from the 20th. of *April*, to the 5th. of *May*, but not on the Shoar, or in *Guinea* it self: after the 5th. of *May*, the same wind is also discovered at the 3 deg. and 3 $\frac{1}{2}$ of *Latitude*.

12. At the Isle of *Madagascar*, from the 15th. of *April*, unto the last of *May*, the *North* and *North-West* wind bloweth; but in *February*, and *March*, the winds blow from the *East* and *South*.

13. In *April* or *May*, in the tract of *Land*, and *Sea*, from *Madagascar* to the Promontory of *Goodhope*, the *North* wind, and the wind *Collateral* to the *North* blow continually to the *East*, so that it is esteemed a *Miracle* if that the *South* or *South-East* wind blew for two daies.

14. After the 20 of *April*, in the *Sea* of *Bengala*, the *South* wind is violent before that day, the *South-West*, and *North-West*, and those being very impetuous, do predominate.

15. There is a Motion for Navigation from *Malacca* to *Maccon*, in *July*, *October*, *November*, *December*, viz. the *South* winds, and *South-West* winds, and oftentimes the *South-East* winds, but in *June*, and *July*, at the beginning the *West* winds rage, about *Malacca*, and in the *Sea* of *China*.

16. The Motion by which they Sail from *Java* to *China*, (from the *West*, to the *East*) beginneth with the Month of *May*.

17. The Motion by which they Sail from *China* to *Japan*, from the *West*, to the *East*, is in force in *June*, and *July*: viz. the *South-West* wind; but the *North* and *Collateral* wind to the *North*, at the *East* oftentimes interpose, and that especially at the day time, but in the night season the *South-East* and the first *Collateral* wind at the *East* do interpose, and let.

18. A contrary Motion, viz. from *Japan* to *Maccon*, from the *East*, to the *West*, is in *February*, and *March*, viz. the *East*, and *North-East* winds, but these predominate not in the *Sea*, but on the Coasts of *China*, which those that Sail in that Voyage from *Japan*, observe, they term them the *Winds* over the *Land*.

19. The motion by which they Sail from the *Phillippine Isles*, or *China*, to *Aquapulco* in *America*, viz. the *Western* winds are observed in *June*, *July*, and *August*, but they are very weak, except in the *Full Moon*; now they are the *South-West* winds: but they avoid the *Torrid Zone*, and choose the Coasts of *America Septentrionalis* to shun the wind that is general from the *East*, which yet then is less vehement. This therefore must be known in general, that the *Occidental* Motions, or *West* winds, are more weak than the *Oriental*, because that these are helped by a general wind, but these are diminished by it.

20. In the *Sea* of *China*, a *South*, and *South-West* Motion reigneth in *July*, *August*, and *October*. But if that these winds be changed into an *Oriental* Motion, they never presently return to the *South*; but first to the *North*: hence when they have blowed some daies, they return to the *East*, and lastly to the *South*: sometimes the *North-East*, is immediately changed into the *South-West*, sometimes presently from the *North* to the *South*, and that here is sufficiently frequent.

So in the *Sea* anniversary winds are more constant, unto which I add those that are less constant, and those which on the Coasts, and also on *Maritime* places are observed to be Anniversary.

Proposition IV.

The *Etesian winds*, so termed, that are Anniversary in *Greece*, proceed from *Rain* and *Snow* dissolved on the *Mountains*.

The *Grecians* observed a twofold kind of *Winds* on every *Year*, which were Stated and termed *Etesian winds*. Viz. 1. Those in the *Summer*, or *Canicular* winds; which they called by the General term *Etesia*, because that they were more strong and sensible. 2. The *Winter* winds, which they called the *Chelidonii*, or *Ornithia*.

The *Canicular Etesian* winds are Northern, in the placing of the beginning, of which to a certain, Writers do much differ. When that *Aristotle* had added that they blow after the *Summer Solstice*; he mentioneth nothing of the true time, which certainly is a very great negligence, which at length he augmenteth, where making mention of the *Ornithia*, he omitteth both the time, and the quarter of these winds: but those that have noted the time of the *Etesian* winds, they have observed that the forerunners of them begin to blow either on the 6 of *July*, or on the 15 of *July*, at the rising of the *Canicular* or *Dog Star*. Now those winds blow 40 daies, the whole space of the *Dog daies*, and therefore end with the Month of *August*; but others extend them to *September*: they

Of Etesian winds and from what they proceed

they only blow in the day, and cease in the night, therefore *Mariners* formerly called them, the sleepy and delicate winds.

The cause of these winds questionless is the dissolving of the Snow caused by the heat of the *Sun* on the Northern Mountains, which at that time is very great, by reason that now for divers Months together, almost he hath continually shined on those Mountains without any setting; and with this cause it aptly agrees that the *Etesian* winds cease on the night, because that then the resolution of the Snow ceaseth, or at least is lesser than the generation of the wind requireth, because that the *Sun* then is over or near the *Horizon*, or else setteth wholly.

The same Northern *Canicular* wind is not only in *Greece*, but also in *Thrace*, *Macedonia*, the *Aegean Sea*, and the Isles of the same, (all which *Regions* are sometimes comprehended under the general term of *Greece*;) yea in *Egypt* also; and it is probable that the wind which we have said in the former *Proposition*, bloweth in *Congo*, (situate beyond the *Aequator*;) that that wind that bloweth from the North, between *March*, and *September*, is the same with these *Etesian* winds of the *Grecians*, or at least proceed from the same cause: as also that North wind which we have said bloweth in the same Months in the Kingdom of *Guzurat*, from *March*, to *September*; these I say, we ought to Determine to proceed from the dissolved Snows of the Mountains of *Asia*, termed the *Sarmatian* Mountains, and the Girdle of the World, and therefore we reckon it amongst the *Motions*.

The second Anniversary wind of the *Grecians*, is the *Chelidonian*, which they relate to begin after *Winter*, but have not noted the day of the beginning. Now these are South winds (contrary to the *Canicular* or *Etesian* winds) and very weak, without violence. Moreover inconstant, and not so continual, whence they render the *Sea* calm.

Aristotle relateth that they blow by Course even unto the middle of *Summer*, until the Northern *Canicular Etesian* winds begin, but that they are not so much discerned.

The Cause also of these winds, is the dissolving of the Snow on the Mountains of *Monomotapa*, which Snow the *Sun* rarifyeth, because that in the time of *Winter*, and that of *Greece*, they have *Summer*, the *Sun* passing through the Southern parts of the *Zodiack*; and this wind is also found in *Congo*, *Egypt*, and the *Aegean Sea*, and the like is in *Guzurat*, but for very many Months, when it beginneth to blow in *Congo*, and *Guzurat*, in *September*, it continueth even to *March*.

The Anniversary wind of the *Grecians*, which they call *Ornithia*, or the *Bridges* wind, this they say bloweth after the *Vernal Aequinox*, the *Sun* ascending to the *Vertex* of the *Europeans*.

Proposition V.

Why the Etesian winds blow not in Italy, France, Germany, Persia, and other Regions? especially seeing that they are more near the Northern Mountains, from whence we assert the Etesian winds of the Grecians, Congo, and Guzurat do arise and blow.

The Question is of no small moment, and I wish that we had more accurate Observations concerning this matter, viz. the notations of the winds, which at that time are observed in each Region, whether in every Year the same never return?

Yet if that any thing must be said to the Question, these seem convenient. 1. We cannot deny but that the North wind often bloweth in our *Canicular*, or *Dog* daies. 2. That it is discovered less continual and in each year, peradventure the Cause is the often blowing of other winds, which hinder the discovery of the same. 3. We may say that the Mountain from which this first resolution of the Snow beginneth, is situated directly from *Greece*, and therefore the first *Canicular* wind is carried hither, but the Vapours are carried hither from the Snow of the other Mountains, because that here they find a free passage made, but I shall reject these my extemporay thoughts, when that I shall see a better reason, and more accurate Observations.

Pro-

Proposition VI.

Some winds are proper and almost perpetual to some place or tract of Land, others are ceasing.

Those places of the Earth are very few which have a certain wind at a fixed time, viz. these:

1. The places of the *Torrid Zone*, especially of parts of the *Pacifick* and *Aethiopic Sea* situate in the *Zone*, enjoy a perpetual wind, viz. an *Oriental* wind or its *Collateral*, which they call a *General* wind, as we have shewed in the second Proposition, where we have treated largely of it. Yea this wind is not so much to be reckoned amongst the proper winds, but rather to be determined to be common to all places; for although by accident it happeneth that it be not discerned in all places, viz. because other winds blow more strong, yet it is proper to some: the Cause is alledged in the place cited.

2. On the Coasts of *Peru*, and part of *Chili*, and to the adjacent *Sea*, the South wind is almost perpetual, and his *Collateral* wind at the West. It beginneth at the 46 deg. of Latitude, and bloweth to *Panama* the *American Isthmus*, and causeth that in few daies Ships arrive from *Lima* at *Panama* laden with Gold, Silver, &c. But it requireth many daies sail from *Panama* to *Lima*. But this wind bloweth not in the *Sea* remote from the Coasts of *Peru*. It is difficult to render the cause of this wind, by reason that the South Land from whence it seemeth to blow, is not yet known unto us. Yet I think it probable, that because that Mountains are found in it covered with perpetual Snow; therefore the winds are generated from a continual resolution of them. But I will not infect the mind of the Reader with these my suspicions or conjectures. For peradventure the Snows which are found all the year long in the high Mountains, at the *Streights* of *Magellan*, are the cause of these winds, but yet it may be Objected, that those Mountains lie from the South towards the West, declining from the South: wherefore we shall leave this to a more diligent inquisition, or a more full knowledge of the South Continent.

3. At the Coasts of the Land of *Magellan*, or *Del Fuego*, about the *Streight Le Maire*, continual or at least very frequent Westernly winds do blow, and that with that force, that they make the Trees to bend towards the East from their perpendicular rectitude; neither is there any part of the Earth in which those *Occidental* winds so often blow; but on the other part of the *Streights Le Maire*, at the Coast of the South Land the South wind bloweth. I can render no other cause of those *Occidental* winds, but that I suppose them to be raised from Snow and Clouds in the South Continent, which extendeth it self from the side of that *Occidental Streight*, from the South towards the North: But these are doubtful and more diligently to be inquired after.

4. On the *Malabar*ian Coasts of *India*; for almost the whole year, the North and North-East winds blow: the cause proceedeth from the resolution of the Snows of the Mountains of the *Asiatick Sarmatia*, viz. *Imaus*, or *Caucasus* from the Clouds on the other Mountains of *Asia*, which are collected and press the subject Air.

5. In the *Sea* near to *Guinea*, the North West wind is frequent, and in the remote *Sea* the North East.

6. In the middle passage between *Japan* and *Liampo*, a *Maritime* City of *China*, even unto these are found *Occidental* winds, which blow in *Japan* in *November*, and *December*.

7. At the Isle *Guotou*, not far from the Isle *Dos Cavallos* in the *Sea* of *China*, is a frequent South wind, when that yet in the neighbouring *Ocean* a North wind is predominate.

Pro-

The *Etesian* winds blow not in all Regions, though near the Northern Mountains.

Places which have a certain wind at a fixed time.

Proposition VII.

Unto these Periodical or State Winds, appertain those also that are termed day Winds, which in some Regions, and at a certain time of the year blow for some hours every day.

Of Day Winds
so called.

Now they are found to be twofold, and that only in some *Maritime* places, for some blow from *Mediterranean* places to the Shore towards the Sea; and others on the contrary from the Sea to the Shoar.

1. On the *Malabar* Coasts in the Summer season, viz. from September to April, the *Terrestrial* winds, or *Terrinhos* do blow from the twelfth hour of the night to the twelfth hour of the day, now these winds are Eastern winds. But from the twelfth hour of the day to the twelfth hour of the night, the *Sea* wind, or *Viraconus*, to wit, the West wind bloweth: but this is very weak, so that by its assistance the Ships can hardly arrive at the Shoar. I suppose the cause of those *Oriental* winds from twelve at night to twelve in the day, partly to be a general wind, and partly Clouds on the Mountain *Gatu*. But the cause of the *Occidental* Winds, that blow from twelve in the day to twelve at night, is the resolution of thick Clouds caused by the setting of the *Sun*, which Clouds before by the *Oriental* wind were forced towards the West. Out of those named Months, the North wind predominateth, also the East and North-East, neither by reason of the often Tempests are these *Terrestrial* and *Marine* winds discerned.

2. In *Musulipatan* a City on the Coasts of *Charomandel*, these *Terrinhos* begin to blow on the first day of June, and continue only fourteen daies, and then the Ships depart thence. But these are rather to be referred amongst the motions, because that as far as I can conjecture from the words of the *Nautick Description*, these *Terrestrial* winds on those daies are there continual, neither do the *Marine* winds succeed them.

3. On the Coasts of *America*, and new *Spain*, unto the *Pacifick Ocean*, *Terrestrial* winds blow in the middle of the night; and *Marine* winds in the day.

4. In *Congo*, and the Provinces at *Lopo Gonsalvo*, *Terrestrial* winds blow from the evening all night; and *Sea* winds begin in the morning, and so lessen the heat of the day.

5. The *Subsolan* winds also, which are found to blow before the *Sun*, and with the *Sun* rising every day, in all places, especially in *Brazile*, where it hapneth every day in the morning. It is no difficulty to explain the cause of it: for either we say that it is a particle of the General wind, or that the *Sun* disscuffeth and rarifieth the more gross particles condensed by the night.

6. The *Etesian* and *Chelidonian* winds of the *Grecians*, appertain to the *Diary* or day winds.

7. On the Coasts of *Camboja* from *Varrella* to *Pulo-Catte*, from the 28 of July, to the fourth of August, *Terrestrial* and *Sea* winds successively blow often every day, because that the motions then cease there, and cause a calm. The West and North-West are the *Terrestrial* winds. But the Collateral are the East, to pass through the North, and presently are reflected at the South; then a calm succeedeth until the *Terrestrial* winds begin to blow again, which yet are discovered on the *Sea* not above two miles from the Shoar.

8. Those *Terrestrial* and *Sea* winds are found to blow in the night in *America* at *Havanna*.

Pro-

Proposition VIII.

By how much you draw near to the Equator from the Artick Pole, by so much the Northern-winds are found to be less vigorous; and having passed the Equator in part of the South Continent, Southern-winds are vigorous, which in these places are cold and dry, especially in *Chilis* and *Peru*.

The cause of both are the same, by reason that they both proceed from the *Polar* places; yet South-winds are found in the North Continent, and Northern in the South.

Proposition IX.

From what hath been said it is manifest, that there are four differences of Winds.

1. Those that are common, which blow at all times, and in every place, except that they be hindered by other winds; such is only one, viz. the General wind.
2. Proper winds, which blow at all times; but yet only in a certain place or tract of the Earth, not in all the Earth.
3. Those that blow in many places, but not continually, or at all times; as are *Motions*, *Anniversary* winds, and some *Diary* winds.
4. Those that blow not at all times, nor in many places.

Four differences
of Winds.

Proposition X.

Some Winds are sudden, impetuous and violent, not continuing long.

Such are the Winds termed *Prester*, *Typhon*, *Turbo*, *Exhydrias*, *Ecnephias*. These Winds are Anniversary in some places; and some are more frequent in some places in the Sea.

The Wind called *Prester* is a violent wind, breaking forth with Lightning; such are seldom observed, and it is seldom solitary without a wind termed *Ecnephias*. But *Seneca* saith, that a *Prester* is a *Typhon*, or Whirlwind, with an inflamed Air.

An *Ecnephias* is a sudden Wind, and violent breaking through some Cloud or Vapour; such *Ecnephias* are often in the *Aethiopian Sea* between *Brazil* and the Procurrent of *Africa*, especially at the Promontory of *Good-hope*, and from the other side of *Africa* to *Terra de Natal*, also at *Guinee* under the Equator. *Mariners* call them *Travados*, by a *Portugal* word: also in some Months of the year it is more frequent in some Seas.

That Cloud, and sometimes many thick and dusky Clouds, are manifestly Leheld by the *Mariners* to collect and augment by degrees, and that in a most serene Sky, before that the Wind breaketh forth: and therefore when that they see it, they ought to furl their Sails, and defend themselves against a future Storm. But before that *Sea-men* had learned the nature of these Clouds, and their Prognosticks, many Ships having entred into this Sea were cast away, which the *Portugals* first experimented; for that Nation first of all the *Europeans* sailed the *Aethiopian Ocean*: For *India* being discovered by *Gamma*, the King of *Portugal* sent thirteen Ships, a new Navy of great burthen, thither, under Admiral *Caprali*, in Anno 1500. This Navy first of all the *Europeans* arrived at *Brazil* to the great joy of the *Portugals*. Here, when that they had stayed sometime, viz. the Month of April, they set Sail thence on the Month of May towards the Promontory of *Good-hope*; but they had a most cruel Storm from an *Ecnephias*, the approach of which they saw, yet were not acquainted therewith. Which *Maffæus* thus describeth: From *Brazil*

Of sudden and
violent Winds,
and not of
long continu-
ance.

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to the Promontory of *Good-hope* they reckon almost two thousand Leagues (that is, about a thousand *German* miles,) those are the Kingdoms especially of the raging Ocean and violent Winds. The *Portugals* having entred into that space more adventurously than fortunately on the Month of *May*, a flaming Comet appeared incontinently even to the tenth day. And now the Sky often changing, as also the Sea, black and fordid Clouds were conglobated to the North, and collected all the Wind into it self, as it were by reciprocation, the Sea was languid, and the Calm treacherous; the *Sea-men* unskillful both in the Places and Tempests, spread their Sails to receive all the gale of Wind; when from those Clouds, as I have said, the North-wind pouring it self suddenly with an universal violence, it Shipwrecked four of their Ships that were not so well disposed to hand their Sails in a moment, the rest looking on, so that of so great a Company of men none escaped. The sudden striking of the Yards or Sails rent by the wind, preserved the rest by accident. Then the North-wind blowing furiously, the Sea swelled, the Clouds sometimes advanced to the Skies, and sometimes sunk to the depths of Hell: the water in the day time appeared as black as Pitch, and in the night time of a fiery colour. This dismal Tempest continued the space of 20 days.

See *Maffius*.

The Promontory of *Good-hope* is especially infamous for such *Ecnephias* or *Travados*.

There is not far from the Shoar a very high Mountain not ending in an *Apex*, but having a plain on the top, like to a Table. From that top an *Ecnephias* breaketh forth with a great violence, and wonderful Prognostick. For the Sky being very clear, and the Sea calm, a Cloud is beheld to stand on the Table of the Mountain, which is so small at first, that it seemeth not to exceed the bulk of a grain of Barly, and at length it increaseth to the bigness of a Walnut. The *Dutch* call it the *Oxes-eye*, because that this Cloud is said to be like unto it, then after a while the Cloud augmenteth, and extendeth it self over the whole plain of the Mountain. Then on a sudden an *Ecnephias* breaketh forth from the top of the Mountain with so great violence, that it over-setteth and sendeth to the bottom Ships that are unprovided and not well strengthened; but *Sea-men* being now more cautious, when that they once discover that *Bulls* or *Oxes-eye*, presently depart from the Shoar as far as they can, and then furl their Sails, and use other Artifices to preserve their Ships; neither doth this Prognostick ever fail: therefore they fly this deadly Banquet. After the same mode an *Ecnephias* rageth at *Terra de Nata*: the *Bulls-eye* fore-running it, by which many Ships have been cast away. And so it is also in that whole tract between that and the Promontory of *Good-hope*. In *Dauphin* in *France*, not far from *Vienna*, is a high Mountain, on the top of which is a standing-Pool, from whence all Tempests seem to arise in these places: on the top of it is procreated a Cloudy exhalation, which foresheweth immediately Thunder or Storms to succeed.

In the Sea between *America* and *Africa*, and near the *Aequator*, such *Ecnephias* and *Travados* are frequent, especially in those Months in which no Winds blow constantly, or if they do, it is very seldom, viz. throughout the whole year, especially in *April*, *May*, and *June* (in other Months it is more rare,) and they are very observable on the Coasts of *Guinea*: The *Portugals*, as I have said, call them *Travados*, which word also the *Dutch* keep; but the Inhabitants of *Guinea* call them *Agremonte*. They often happen, viz. three or four times in a day, by and by they cease; for they continue for the most part above an hour and a half, but the first shock is very violent. They break out of black and dusty Clouds, the Sky being clear at hand. By their assistance *Sea-men* oftentimes pass the *Aequator*, because that other continual Winds are often wanting there, especially in those three Months; neither do they hinder Ships to sail, except at the first onset. But in the Sea that is near to that part of *Africa*, in which the Kingdom of *Loango* is situated, there is a frequent *Ecnephias* in *January*, *February*, *March* and *April*: so on the Promontory of *Africa*, called by the Ancients *Aromata*, and now *Guardafu*, not far from the Mouth of the *Red Sea*, in *May* every year the North-wind rageth, and a most violent *Ecnephias*. For

For you must know, that as some Anniversary winds are less violent: so also *Tempests* and *Ecnephias* are Anniversary in some places. In such an *Ecnephias*, not far from that place, the *Portugal* Admiral *Sodrens* was lost Anno 1505; who being fore-warned by the *Africans* would not follow good Advice.

But in the Mouth of this *Arabian* Sea, as also in *Arabia* and *Aethiopia*, a peculiar and wonderful *Ecnephias* doth somewhat happen, viz. a thick and black Cloud, mixed with Nubicular flames like to a burning Furnace (dismal to behold) cloudeth the day in darkness, of an instant a Storm breaketh forth, the rage of which is by and by pacified; but it casteth forth red Sand in great abundance on the Land and Sea, so that the *Arabians* say, that it hath often happened, that such Storms of Sand have overwhelmed the Annual Company of Merchants and Travellers with their Camels, they term them *Carawanen*, *Caravans*, or *Cassila*, viz. every year once or twice Merchants being met together from divers parts of *Asia* in *Syria*, go from *Aleppo* into *Arabia* about six thousand persons, by reason that the wonted Robberies of the *Arabians*, and the difficulty of the way, cause them to fear to Travel alone: which also they do from *India* to *China* and *Tartary*: and thence they say, that the *Mumia* of the *Arabians* and *Aegyptians* hath its original. Viz. those Bodies covered with the drifts of Sand, are dried up by the great heat of the Sun. Now this *Ecnephias* ariseth from the Northern quarter into which the *Red-Sea* is extended; and therefore it is probable, that seeing so great a quantity of this Sand is found on the shoar of this Sea, that it is raised aloft by the Wind, and that thence that Red colour is seen in the Clouds, and thence also the Sand is ejected from the Clouds.

That such an *Ecnephias* ariseth in *Lybia*, by reason of the great quantity of Sand, is not improbable, and was in some measure known to the Ancients; who therefore writ, That the access to the famous Temple of *Jupiter Ammon* in *Lybia*, was difficult, neither were they altogether ignorant of the generation of *Mumia*. *Twistius* a *Dutch-man*, that lived a long time in *India*, saith, that in the Kingdom of *Guzurat* Clouds of Sand, or an huge quantity of Dust (that are elevated by the heat of the Sun) do oftentimes overwhelm the Travellers. Now we must speak of the Causes of this Tempestuous wind, whence the *Ecnephias* proceedeth. It is evident, that it breaketh forth of a Cloud. Now there are two Modes by which such a Wind may seem to be generated from a Cloud: 1. If that a Cloud tending downwards by its gravity striketh the Air with a great force, as we discover by Experience, if that stretched forth Sails fall, the Air is moved with an *impetus*. And thence it cometh to pass, that by how much the Cloud or *Bulls-eye* appeareth less, by so much the Storm is the greater that followeth, viz. because that the Cloud is more high, and therefore appeareth small; and descending down from a higher place, it more vehemently striketh the Air; the other is the motion of the generation, if that the Wind included in the Cloud breaketh forth suddenly, or by reason of some fire or Sulphureous matter, the way being rendred strait, and other outlets being restrained, the Vapours strike, as from a Vessel of a narrow mouth containing water, if that it be heaped, the wind breaketh forth; but the first cause seemeth more probable.

Proposition XI.

An Exhydrias is a Wind breaking from a Cloud with great abundance of water.

It is little different from an *Ecnephias*, but that the Cloud from whence it seemeth to break, is now condensed into water, and so long upheld by other circumstantial Clouds, and peradventure forced into one by the winds, until by its ponderosity it rusheth downwards, and strikes the Air, whence a great Wind proceedeth. But these *Exhydrias* are very rare: yet the *Ecnephias* hath for the most part Rains. Showers, or thick Clouds accompanying him; and therefore only differeth from the *Exhydrias*, according to the more or the less.

D d 2

A Wind called an *Exhydrias*.

less. For a *Nimbus* is nothing else, but a Wind with a violent Rain, and therefore is more general than an *Ecnephias*: but an *Exhydrias* oftentimes falleth perpendicularly from the top.

Proposition XII.

A Typhon is a violent Wind, passing swiftly through all the quarters about a place, and for the most part rushing from the top.

A VVind called a Typhon.

The *Saracens* call it *Olifant*; the *Indians*, *Oraucan*. It is often in the *Oriental Sea*, especially in the Sea of *Sian*, *China* and *Japan*, (between *Malacca* and *Japan*.) This violently breaking almost from the Western quarter, and being whirled about the Horizon with a rapid course, perfects its circumference by continual increase in the space of twenty hours, raising those vast Seas with an horrid violence and swellings; the Billows beating one another, take away all hope of safety from the *Mariners*: and so both by reason of these *Typhons*, and also other Storms, sailing from *India* to *Japan* is very dangerous, so that it is accounted an happy Voyage, if that one Ship of three keepeth its course. At the Autumnal Season a most furious *Typhon* doth especially predominate, and that often with so great violence, that those that have not seen it, can hardly believe it; so that it is no wonder, that some mighty Ships have been weakened by those great Waves: you would think in this Storm, that Heaven and Earth would meet.

Neither doth it only rage on the Sea, but also on the *Shoars*, and overwhelmeth many Houses, and throweth up huge Trees by the roots, and forceth great Ships from the Sea on the Land for about a quarter of a mile.

The *Mariners* term it a Wind that runneth round the *Compass*. In the *Indian Ocean* it seldom continueth above six hours, and maketh the Sea so level at the first, as if that it were plained; but on a sudden horrible Waves do follow. So about the City *Ardibil* in *Persia*, in *June* and *July* every day, when that the *Sun* is at his *Meridian* height, a *Whirlwind* ariseth for an hour, by which a great dust is raised.

Questionless the cause of a *Typhon* is, that a wind breaking forth with violence from some one quarter towards another, findeth an obstruction in this, and therefore is wreathed and turned into it self; as we see, that if water be suddenly moved, if that an obstacle be put in its way, it moveth in a round suddenly, and with a force. It may be, that a *Typhon* may arise from opposite winds blowing together violently, which render the superficies of the Sea so plain, and comprehend the Ships in the middle. If that it rush from above, it is called *Categis*: and then it maketh the Sea so plain, as if that it had been plained; but presently mighty Floods or Waves arise.

Proposition XIII.

Whether that some Winds break forth from the Earth, or Water.

Of VVinds breaking forth from the Earth, or VVater.

We easily apprehend that this may easily be, seeing that *Cavities* are here, and also *Winds*, *Sulphureous substances*, and *Moisture*. Now nothing hinders, but that a gulf sufficiently vehement may be there generated, viz. if that it be any thing hindered, as it is procreated, to go forth; or if that it be presently generated in a great quantity, as much as the winds require.

If that the Outlet be hindered, an *Earthquake* is generated, or a wind with a violent force maketh way for it self, and thrusts forwards the Earth. So oftentimes a *Smoke* breaketh forth from the Earth in the Isles of *Maarice*: so also from some Caves. In *Japan* is a *Fountain*, breaking forth at certain hours of the day with great noise.

Yet I do not remember, that I have read of any Wind breaking forth out of the Sea.

Propo-

Proposition XIV.

Whether that a certain Wind may arise from the flowing of the Sea, and of the Rivers?

Experienced testifieth, that in those places where the flux and reflux of the Sea is discovered, if at any time the Air be free from other winds, from the most part with the water flowing from the Sea, a wind also bloweth from the Sea.

Of a VVind that floweth from the Sea and Rivers.

Therefore it seemeth probable, that the Air, by reason of the contiguity, is carried with the water to the same quarter: But this should be more diligently observed, Whether, when that the Air is still, the same wind is discovered with the afflux of the Sea? I think yet, that another cause of this Wind may be given, viz. that the Air is forced from the place by the flowing water. Now the Air is much moved at a very little impression: so they will have the Air moved with the Rivers that run swiftly.

Proposition XV.

Why Ignis fatui, Castor and Pollux, and Helena, are amongst Tempests.

The *Portugals* call them *Corpo Santo*; the *Spaniards*, *St. Elmo*. Now not only one, but many are oftentimes beheld in Ships at the Masts, wandering with an uncertain motion, as other *Ignis fatui*, although that sometimes they may seem to fix on the Sails and Masts: But sometimes leaping up and down they appear like a flame, or a Candle burning obscurely. If that four such vicine Lights be seen, the *Portugals* term them *Cora de Nostra Senecora*, the Crown of our Blessed Lady, or *Virgin Mary*. And these they account of as a most certain sign of the Tempests to cease. The cause of those Fires is a Sulphureous part, full of *Bitumen*, forced downwards through that great motion of the Air, and forced or fired into one by agitation or congregation. So we see by agitation, that the Butter of Milk is separated: from this Phenomenon is also collected, that for the most part those violent Tempests proceed from a Sulphureous spirit, rarefying and moving the Clouds.

Proposition XVI.

Why there is so frequent a Calm in the Sea near Guinee, and under the Equator in the Atlantick Ocean, between America and Africa.

This is one of the Phenomenons about Winds of no small difficulty, That at *Guinee*, which is two degrees from the Equator, and under the Equator, is almost a perpetual Calm, especially in *April*, *May*, and *June*, where no motions are found there, when that no such thing is observed in other parts of the Ocean situate under the Equator. Indeed an *Ecnephias* is sometimes sufficiently frequent there; but this also is desired oftentimes by the Seamen, because that by the force of frequent *Ecnephia* they endeavour to sail beyond the Equator: For it happeneth very often, that Ships sailing from *Europe* to *India*, are detained a whole Month at the Equator before that they can pass it. Now especially they avoid the Coasts of *Guinee*, and the Calm there; and therefore with some hindrance to their Voyage, they sail towards *Brazil*: yea some Ships are detained here for three Months, before that they can depart from the Coasts into the Mid-Sea. I have not yet found out the cause of the Phenomenon, unless perchance this be it, that *Snows* are found intercepted in no Mountains of *Africa* between *Guinee* and *Barbary*, which may generate the Winds.

Frequent Calms in the Atlantick Ocean.

Propa-

Proposition XVII.

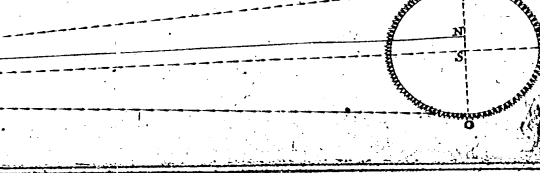
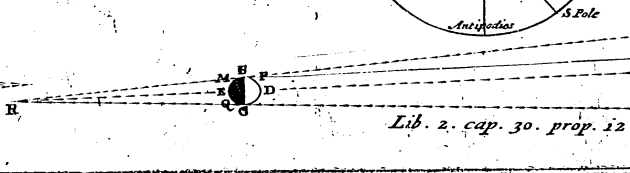
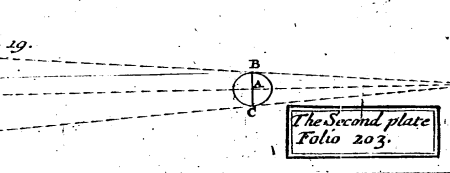
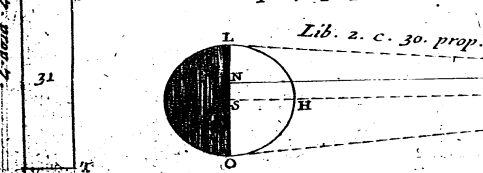
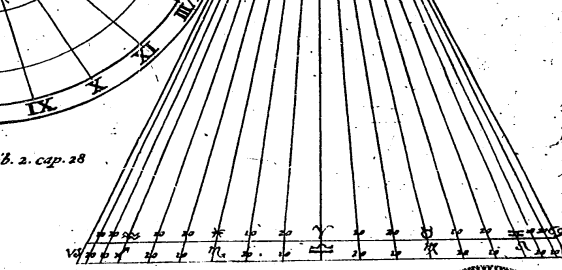
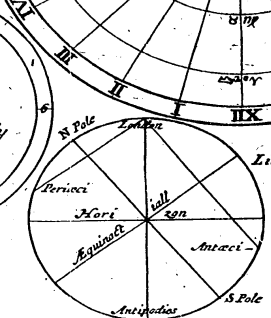
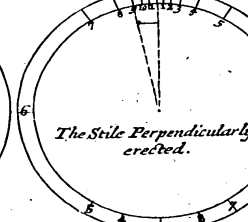
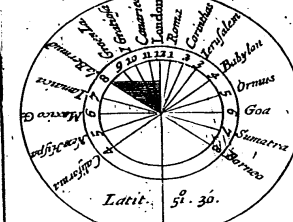
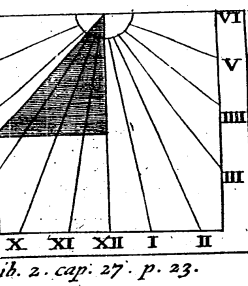
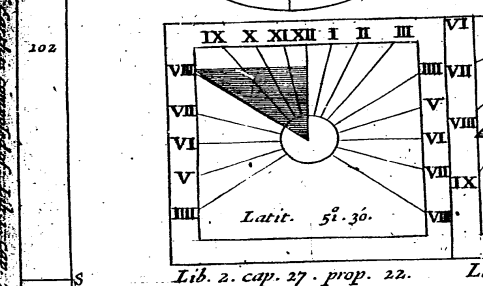
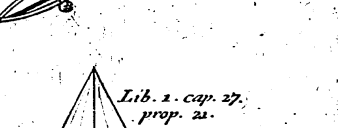
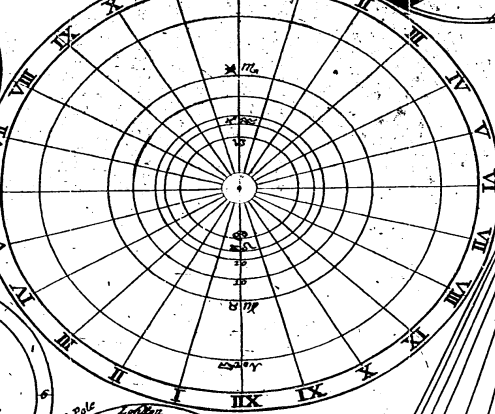
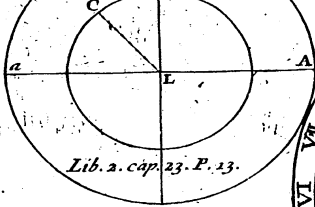
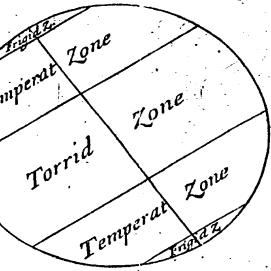
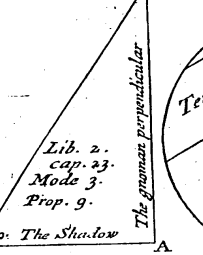
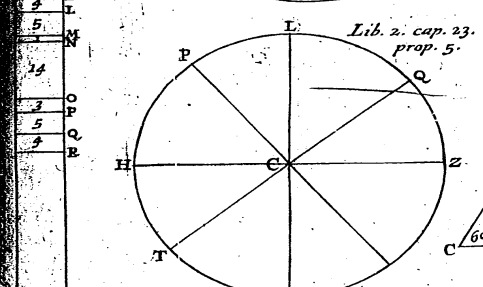
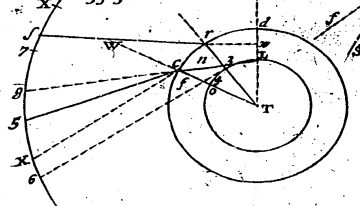
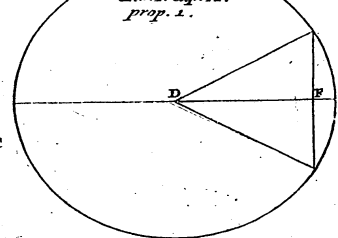
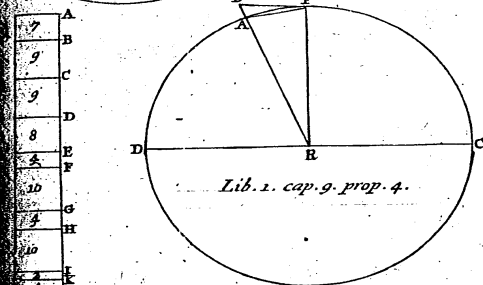
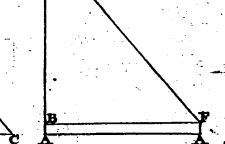
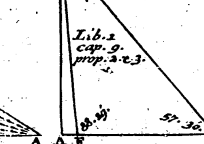
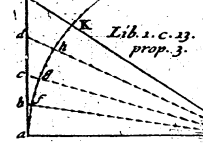
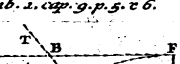
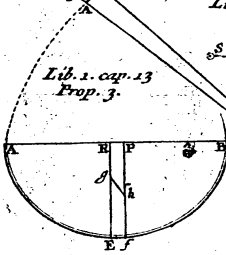
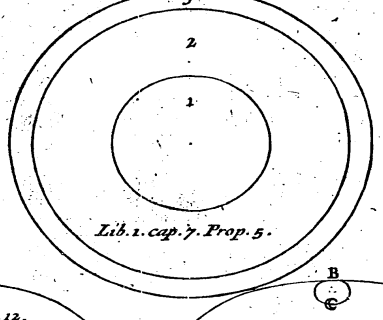
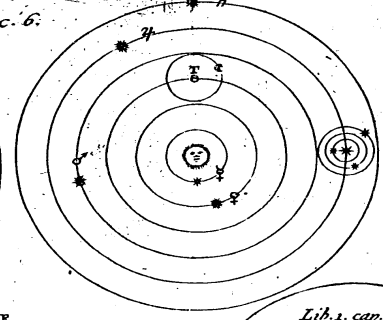
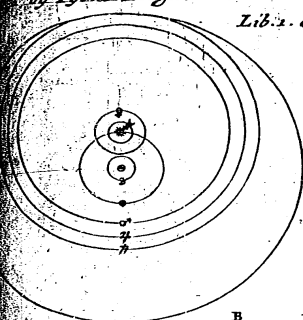
In some Regions the Tempests are Anniversary.

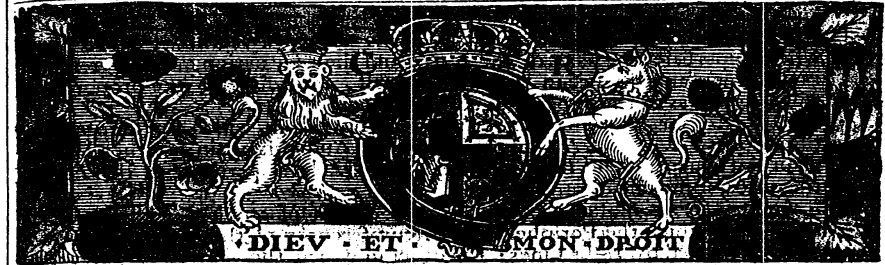
Of Tempests
Anniversary
in some Re-
gions.

We have given some Examples of these in our former Propositions, viz.
1. Concerning the mutation of Motions. 2. Concerning our *Ecnephas*.
3. Concerning a *Typhon*. 4. At the Promontory of *Good-hope*, in *June* and
July. 5. In the *Isle Del Majo*, with the Southern-motion in the end of *Aug-*
ust, in 35 degrees of the Meridian of *Tristian de Cunha*, in *May*, in the *New*
Moon, the *West-wind* rageth, and Shipwracks: but in 33 degrees of the same
Meridian, the *North* and *North-east Winds* predominate. 8. In *June* and *Ju-*
ly in the Sea of *China*, at *Pulon Timor*, the *West-winds* are violent and dange-
rous. 9. Between *China* and *Japan*, many Storms are from the *New Moon* of
July to the twelfth day of the *Moon*. 10. There, if in *June* other winds blow
besides the motion, sometimes from this, sometimes from that quarter, until
that they are settled in the *North-east quarter*, of a certain a Storm followeth.

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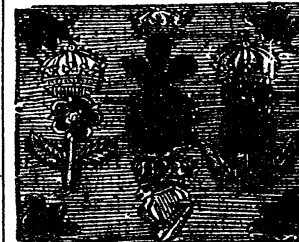
THE
SECOND BOOK
OF
General Geography,

CONCERNING

*The Affections of the places of the Earth depending on the
apparent motion of the Stars.*

CH A P. XXII.

Of things requisite to be foreknown in the knowledge of Geography.



hitherto we have been employed in an absolute contemplation of the *Earth*; we now draw near the Second Part of this Doctrine, in which we shall consider those Properties or Affections which happen to the *Earth* from the apparent motion of the *Sun* and *Stars*: Neither would they be, except this *Motion* were evident. The Explication of which Affections will, with greater right, appertain unto *Geography*; if so be that same *Motion* be attributed unto the *Earth* it self, of which we have treated in the Sixth Chapter. Now for the right knowledge of these Affections, these following *Hypotheses* and *Definitions* are necessary to be understood.

Defini-

Definitions.

An Artificial Terrestrial Globe termed a factitious Globe.

A Map, a plain Figure, and of what Lines it consists.

Of the Poles and Axis of the Earth.

The Equator, or Equinoctial Line.

Parallels.

Of Maps.

The Ecliptick.

First, the *Artificial Terrestrial Globe* is termed a factitious Globe, from whose Superficies the parts of the *Earth*, and their situation, are represented, as they have an existence in the *Earth* itself, according to the proportion of this Superficies to the Superficies of the *Earth*.

A *Map* or *Geographical Card* is a plain figure, in which the situations of the *Terrestrial Superficies* are represented. And this again is either Universal or Particular: The first exhibiteth the whole Superficies of the *Earth*; the other, some one or other Region.

Some *Maps* consist of strait Lines, and others of crooked: These of strait are such in which the Peripheries or Circumferences of the *Terrestrial Circles* are represented by right Lines; the other in which the same *Peripheries* are exhibited by crooked Lines. But as for the compofure of a *Terrestrial Globe*, and *Geographical Maps*, we shall take an occasion to treat of in the end of our Book, by reason the same cannot be understood before the Doctrine, which we now handle, be well apprehended.

Secondly, The *Poles* of the *Earth* are two points diametrically opposite in the *Superficies* of the same, which remain immovable in the Diurnal circumrotation of the *Earth*, or which are subjected unto the *Poles* of the apparent Quotidian motion of the *Stars*. But the *Axis* of the *Earth* is said to be the *Diameter* conjoining the *Poles*: Or thus, The *Axis* of the *Earth* is that *Diameter* of the *Earth*, about which the Diurnal motion of the *Stars*, or *Earth* it self, is perfected. Now the *Poles* are said to be the Extream points of the *Axis* in the Superficies of the *Terrestrial Globe*; and that *Pole* which is subjected to the Constellation termed the *Bear*, is called the *Arctic*, *Septentrional*, or *Northern Pole*: the other is called the *Antarctic*, or *Southern Pole*. These are by more facility explained by an *Artificial Terrestrial Globe*, than by words. If the former be wheeled round, those two immovable points will appear, which are the *Poles*, and the *Diameter* imaginarily drawn from one *Pole* to the other through the Center of the *Earth*, shall be the *Axis*.

Thirdly, The *Equator* is said to be the Periphery or Circumference of the greatest Circle in the Globe of the *Earth*, equally distant from both the *Poles*, or placed in the middle between the *Poles*, or whose *Poles* are the same with the *Poles* of the *Earth*. It is also termed the *Equinoctial Line*, and that by Mariners. All the *Stars* in their Diurnal motion, make *Peripheries* equidistant or parallel to the *Equator*; wherefore the *Equator* is the Rule of *Diurnal motion*.

Fourthly, The *Parallels* of the *Equator* are said to be lesser Peripheries, which are parallel to the *Equator*. In an *Artificial Globe* the *Equator*, by reason of its Magnitude, is more conspicuous than the others, and its name is ascribed, and it is divided into 360 degrees. The *Parallels* are also conspicuous, which are likewise termed the *Circles* of the Latitude of Places, as we shall shew in the following Chapter.

These may also be shewed in *Geographical Maps* that are Universal. Indeed in *Maps* of *Right Lines* the *Poles* are not represented, but the Extremities of every Meridian are the *Poles*: but in *Maps* consisting of *Crooked Lines*, the *Poles* are those points in which the Crooked Lines do meet the *Equator*, being transverse in both kind of *Maps*, passeth through the middle of them, and hath a greater Latitude than the other Lines, and withal it is a strait Line; although in the particular *Maps* of *Asia* and *Europe* it be made crooked. The *Parallels* of the *Equator* in strait-lined *Maps*, are strait-lined; and in crooked-lined *Maps*, they are crooked.

Fifthly, The *Ecliptick* is the greatest Circle of the Heavens, which the *Sun* describeth in his Annual motion. In truth it existeth not in the *Earth*; but by reason of its notable use it is marked in the *Artificial Globe*, as also in *Geographical Maps*.

Sixthly,

Sixthly, The *Tropicks* are two *Parallels* of the *Equator*, which are distant from the *Equator* by so great an interval, as the greatest recess of the *Sun* is from the *Equator* towards the *Poles*, or as the greatest declination of the *Sun*, or obliquity of the *Ecliptick*.

The Tropick of *Cancer* is that which is interposed between the *Equator* and *Pole Arctic*.

The Tropick of *Capricorn* is that, which is between the *Equator* and the *Southern Pole*.

In the *Globe*, and in *Maps*, they are wont to be noted by a double *Periphery*, and the same appellation is ascribed. The *Polar Circles* are two *Parallels*, so called; whereof one is distant from the *Pole Arctic*, the other from the *Antarctic*, so many degrees as the *Sun* is from the *Equator* in his greatest recess; and the first is termed the *Arctic Circle*, and the other the *Antarctic*.

The *Circles* hitherto explained do not depend on certain Places, such as the following do, which in divers places are various and different.

Seventhly, The *Meridian* of any place in the Superficies of the *Earth*, is a Line, so termed, which passeth through that place; in which, when the *Sun* cometh, the *Meridies* is in that place. Now the *Meridies* is that moment of the day, which is equally distant from the rising and setting of the *Sun*.

Theorem.

The Meridian of every place passeth through both the Poles of the Earth.

The *Meridians* are drawn through every ten degrees of the *Equator*, which are the *Meridians* of all these places through which they pass. But instead of the *Meridians* of all other places, that doth supply the place, which is made of *Braß*, and in which the *Globe* doth hang. For Instance; If that any place in the Superficies of the *Globe* be brought unto the *Brazen Meridian*, that shall be the *Meridian* of the place.

In *Maps* of *Strait Lines* the *Meridians* are *Strait Lines* drawn from the top, or uppermost part, unto the bottom. In *Maps* of *Crooked lines*, they are those *Crooked lines* which joyn in the *Pole*.

Eightly, The *Horizon* of any place in the Superficies of the *Earth*, is the greatest imaginary Circle in the Heavens, which terminateth the visible part of the Heaven in that place. It is also termed the *Rational Horizon*, that it may be distinguished from the *Visible Horizon*, which is improperly so called. It hath no place in the *Artificial Globe*, but a *Wooden Circle*, in which the *Globe* is sustained with its *Brazen Meridian*, and serveth instead of the *Horizon* of any place, as shall be shewed in the next Chapter; and therefore it is termed the *Wooden Horizon*, and simply, the *Horizon*.

These are the *Definitions*, whose knowledge is necessary for the attaining the following Doctrine: besides which, it behoveth us to borrow from *Astronomy* the mode of the Motion of the *Sun* and *Stars*.

The first and common Motion is that, by which the *Sun*, *Moon*, and all the *Stars* seem to be carried round about the *Earth*, to arise to us, to make the *Meridian*, and to set; and that in the space of twenty four hours. Every one of the *Stars*, and the *Sun*, every day by this their common Motion, seem to describe *Parallel Circles* unto the *Equator*; because that this motion is performed upon the *Axis* of the *Earth*, and the *Poles* of the same; and therefore the *Equator* is the greatest Circle of this Motion; and the Rule and Square by which we measure the Motion of the other *Parallels*. In every hour they pass fifteen degrees through the *Meridian*, both of the *Equator* and every other *Parallel*: for 360 degrees divided by 24 the hours, gives unto every

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The Tropicks.

The Polary Circles.

The Meridian.

The Horizon.

The Motion of the Sun, Moon and Stars.

hour fifteen; and therefore one hour and fifteen degrees of the *Aequator*, make an equal proportion. The *Horary Circle* sheweth the hours; which *Circle* being affixed unto the *Artificial Globe*, is seen in the *Brazen Meridian*, where the Pin or Hand adhereth to the extremity of the *Axis* of the *Earth*, and it is turned about in the *Horary Circle* to shew the hours.

The second motion of the Sun.

Secondly, The proper and second Motion of the *Sun*, which is also Annual, is that in which the *Sun*, (or rather the *Earth*) is moved from West to East, or contrary to its first motion. The time or number of the days, in which the *Sun* returneth unto the same point from whence it departed, or in which it performeth its whole Period or Circle, is termed a *Year*. Now such a Year is 365 days, and one fourth part of a day, or thereabouts. The Way of this second *Solar motion* is termed the *Ecliptick*, as we have said before, which is divided into twelve parts, which are called *Signs*: For *Astronomers* have observed these *Constellations* of the *Heaven*, through which this Way of the *Sun* doth lye; and from these *Constellations* denominated the twelve parts of the *Ecliptick*. And because that all *Constellations* represent the forms of *Animals*, therefore the Ancients termed that Way or *Ecliptick*, the *Zodiack*: Yet those which spake more distinctly, call the *Zodiack*, a *Zone* or *Girdle* in the *Heaven*, whose middle is the very *Ecliptick* it self, or Path of the *Sun*; but the extrem parts from both sides of the *Ecliptick*, are distant from it eight degrees, by reason that the rest of the *Planets* have a certain peculiar motion from East to West. In which motion they do not describe the *Ecliptick* it self, but paths declining somewhat from the *Ecliptick*, which declination, by reason that it exceedeth not 8 degrees, therefore they do attribute 16 degrees of Latitude unto the *Zodiack*, viz. Eight from both parts of the *Ecliptick*, so that the *Zodiack* is that space of the *Heaven* in which the *Planets* are always moving, neither do they ever move out of it: and the *Ecliptick* is the middle Line of the *Zodiack*, which the *Sun* passeth through by an Annual motion, in which it always keeps its fixed course. Moreover, the *Signs* or *Constellations* of the *Heaven*, through which the *Ecliptick* and the *Zodiack* passeth, are these:

The Zodiack, Zone or Girdle in the Heaven.

The Signs of the Zodiack.

March 21.	♈	♉
Aries,	Taurus,	Gemini,
June 21.	♊	♋
Cancer,	Leo,	Virgo,
September 21.	♌	♍
Libra,	Scorpius,	Sagittarius,
December 21.	♏	♐
Capricorn,	Aquarius,	Pisces.

Ecliptick.

Moreover the *Ecliptick* obliquely cutteth the *Aequator*, so that its greatest distance is twenty three degrees, and about thirty minutes. Where therefore the *Ecliptick* cutteth the *Aequator*, which he doth in two points, in one of these is placed the beginning of the *Ecliptick*, and also the beginning of the accounting of the *Signs*. In those points the *Sun* then being in, causeth the equality of the days and nights in all places, as also the beginning of the *Vernal* and

and Autumnal quarters. We begin to number from that point in which the *Sun* makes the beginning of the Spring to us; that is, we being situate from the *Aequator* towards the *Pole Arctic*; the first Sign, or first twelfth part of the *Ecliptick*, is termed *Aries*, the second *Taurus*, the third *Gemini*, and so forth as aforesaid; because about twenty Ages past, those Signs of the *Heaven* were in these very parts of the *Ecliptick*.

Every one of these twelve Signs are divided into thirty Degrees, for the whole *Ecliptick* hath three hundred and sixty Degrees, which being divided by 12 makes 30.

Moreover, seeing that the *Sun* passeth over the whole *Ecliptick* (that is 360 Degrees) in 365 days, and one fourth part of a day, hence we collect, that in every day he passeth 59 Minutes, and 8 Seconds, which is something less than a Degree.

Now as the *Sun* in a years time, or 12 Months, runneth over the whole *Ecliptick*, or 12 Signs of the *Zodiack*, so also in every Month he passeth about one Sign, but his entrance into the Sign is not at the beginning of the Months, but on the 21th day of every Month; and this is according to the *Gregorian Kalender*, and on the 11th day of every Month according to the old *Julian Account*, viz. on the 21th of *March*, he entrench the Sign of *Aries*, or the very Section of the *Ecliptick* with the *Aequator*: then on the 21th of *April* he entrench *Taurus*, and so on. Now this his entrance doth not happen on the 21th of every Month, but in some Months before, and in some after. Therefore when we desire to know the precise place of the *Sun*, we must look for it in an *Ephemerides*, or in our *Almanacks*. The place of the *Sun* is found also in the wooden *Horizon* of the *Artificial Globe* for every day of the year, when one may search when the *Globe* is at hand: for it is a grand fault in a learned or knowing person to be ignorant of the Motion of the *Sun*, seeing that from thence all the seasons of the year, also the days and nights, with many other things do depend, of all which there is great use in the life of man.

The Motion of the Sun.

C H A P. XXIII.

Of the Latitude of places, and the Elevation of the Pole.

Proposition I.

The Latitude of a place in the Superficies of the Earth is the distance of the same from the *Aequator*.

Now a Perpendicular Line or Arch drawn from the place given to the *Aequator*, measureth this distance, and by reason that the *Meridian* of every place is perpendicular to the *Aequator*, therefore the Latitude of the place is the Arch of the *Meridian* of that place intercepted between the place and the *Aequator*.

Of the Latitude of the Earth.

This is termed the Latitude of the Earth, whose extension is in the Superficies from one Pole to the other: as the Longitude of the Earth is the extension of the same returning from the West by the East, unto the West; which is the same with the *Aequinoctial* Line.

The Longitude of the Earth.

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Proposition II.

The Elevation of the Pole of any place, or above the Horizon of any place, is called the Arch of the Celestial Meridian of that place intercepted between one or other Celestial Pole, and the Horizon of that place.

Elevation of the Pole.

It may also be said to be the Arch of the *Terrestrial Meridian* intercepted between one or other of the Poles of the *Earth*, and the *Horizon*. For by this Mode it may be more justly desired, if that the *Earth* cause the first motion: but *Astronomers* for the most part apply the definition to the imaginary *Celestial Pole*.

Proposition III.

To find the Latitude of a place given in the Superficies of the Globe of the Earth, in degrees and minutes, (if that the Globe be great) the same Latitude in Geographical Maps.

For the finding the Latitude of a place by a Globe, or by Maps.

In a *Globe*, let the place given be brought to the Meridian, and let the degrees be numbred from the *Aequator* to the place; they shall be the sought for Latitude of the place.

In *Geographical Maps*; if the Map consists of Right lines, let a Right line be drawn through the place given, parallel to the *Aequator*, except it be already drawn in the Map; or let a Rule only be applied to the place, so that it be parallel to the *Aequator*: and so the bounds of this Line in the Side-lines of the Map, will shew the *Latitude* of the place.

But if the Map be of Crooked lines, so that no parallel can pass through by the place given; one foot of the Compass shall be placed in the Pole of the Map, and the other foot in the place given: and in this space the Parallel of the place to be described in the Side-line, again will shew the *Latitude* of the place; if that the *Parallels* be described from the *Pole*.

Also the distance of the place from the *Pole* may be found out.

Proposition IV.

The Place being given in the Superficies of the Globe, so to constitute the Globe, that the Wooden Horizon may be the Horizon of that place.

Let the Place given be brought to the Meridian, and let 90 degrees be numbred from it towards the adjoining Pole in the Meridian. Let the term of the Numeration be placed in the *Crena* of the Horizon: so the *Wooden Horizon* shall be the Horizon of the place proposed. Nevertheless in the Corollary of the following Proposition, we shall shew an easier method of performing the same.

Proposition V.

The Latitude of the Place is equal to the Altitude, or Elevation of the Pole, above the Horizon of that place.

This is shewed by the *Globe*, thus; Take a place as you please in the Superficies of the *Globe*; then so place the *Globe*, that the *Wooden Horizon* may be the Horizon of the place. Now let the degrees of *Latitude* of the place, and the *Elevation* of the *Pole* be numbred, and they will be found equal.

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The Theorem is thus shewed by a *Mathematical Demonstration*: Let *C* be the Center of the Earth, *L* any place in the Superficies, *P* the Poles, *HP L Z* shall be the Meridian, and *H Z* the Diameter of the Horizon; *P H* the Elevation of the Pole; *Q T* the Diameter of the Aequator, or the Section of the Meridian and the Aequator: and *P Q* shall be the Quadrant of the Meridian, or of 90 degrees, because that *P* is the Pole of the Aequator. For the former reason *L H* shall be the Arch of 90 degrees, because *L* is the Pole of the Horizon: Therefore *L H* is the Arch of an equal Arch *P Q*, and the common part *L P* being taken away, the remainder of the Arch *P H L Q* will be equal.

The Latitude of any place being known, you have also the Elevation of the Pole for the same place. Now the distance of a place from the Pole, and the distance from the Aequator joyned together, makes 90 degrees, wherefore one being known, the other is also.

A Place being given in the Superficies of the Globe, to elevate the Pole so, that the elevation of the Place requireth the elevation of the Pole. This is the same with what was propounded in the preceding Proposition, viz. to cause, that the *Wooden Horizon* become the Horizon of the place given. First find out the Latitude of the Place, and let the Latitude be numbred from the Pole in the Meridian, descending downwards towards the Horizon. Let the Terminus of the Numeration be constituted in the *Crena* of the Horizon: so the Pole will be elevated, as the situation of the Place given requireth.

Proposition VI.

A Place being given in the Superficies of the Globe, or the Latitude of any Place being given, to shew all the Places of the Earth, which may have the same Latitude or distance from the Aequator, or Elevation of the Pole: Or, to find all the places of the Earth, which may have the distance given from the Aequator.

In the *Globe*; Let the Place given be brought to the *Brazen Meridian*, or let the Latitude given be numbred from the Aequator in the Meridian towards the Pole: then let a pointed Chalk be applied unto the term of the Numeration, and turn the *Globe* round: so the Chalk will describe the *Periphery*, which shall contain all the places, whose Latitude is the same with the Place given.

In Maps of Strait Lines, let a Strait Line be drawn through the Place given parallel to the Aequator; all the Places through which that Line passeth, shall have the same Latitude with the place given; In Maps of Crooked lines, let the Periphery be described passing the place given from the Pole of the Maps, as from a Center: so by the same means as before, the Places sought for shall be found. But if no certain Place, but a Latitude be given, let one foot of the Compass be placed in the Pole of the Map, and the other on the side Line to the degree of Latitude, and then the Parallel shall be described.

Proposition VII.

To find the Meridian, or the Plaga, and point of the North and South in the given place of the Earth, or in the given plane.

There are divers ways by which the Line sought for may be found.

First, The most easie Mode is that, which maketh use of the *Magnetical Needle*: For seeing that the *Magnetical Needle*, or *Needle* of the Compass, with one extreame looketh to the South, and the other to the North, the extension of it will shew the *Meridian Line*. But because in very few places it hath respect to the Northern and Southern Point or Clime, and in very many declineth from them, as we shall shew elsewhere; therefore the Meridian line is not accurately found by that, but only an adjoining line, which

The Theorem shewed by a Mathematical Demonstration. See Scheme.

Further Rules to be observed concerning the Latitude of places.

Rules for the finding the Meridian.

See in Chapter the 38th.

although it may serve, when the matter is not much material for which we desire it; yet in concernment of greater moment it may be the cause of a great error.

First draw the Line which the Magnetical Needle sheweth, then taking any point in this Line, let the Periphery of the Circle be described from it, as from a Center, in the which let the Degrees of the Declination of the Needle be numbred, beginning from the false drawn Meridian Line, and that towards the East, if the given Declination be towards the West; and contrariwise towards the West, if the given Declination be towards the East. Lastly, let a straight Line be drawn through the term of the Numeration of the Center of the Periphery. This shall be the true Meridian Line.

There is no need of this labour, if that you have the Mariners Compass at hand, in the which the Declination of the Magnetick Needle is corrected to the place proposed.

Secondly, The Meridian Line is more accurately found out by the benefit of the Stars: First when the Sun shineth, a style or pin being erected, the shadow of it will shew the Meridian Line. But by reason that it is not safe to confide in Dyals, therefore this mode is not altogether accurate, and it sheweth a true Line, yet a little distance from the true.

Thirdly, A Periphery being drawn in a plain given, let a style or pin be erected from the Center of the same, and let the term of the Shadow before the Meridies be noted: or first, the extremity of the Shadow being noted, let the Periphery or Circumference be described by the extremity of the Shadow from the place of the style. Then you must expect so long after the Meridies, until the extremity of the Shadow touch the same Periphery.

Fourthly, If that the Elevation of the Pole or Latitude in the place of the Observation be known, we may by the benefit of the Globe find out the Meridian Line by this means: First by observation, let the Altitude of the Sun above the Horizon be found out; then let a strait Line be drawn on a plain, in which the Sun then seemeth to be; and a point being taken as a Center, in this Line whatsoever it be, the Periphery is described: then let the Pole be elevated in the Globe according to the elevation of the place given; let the place of the Sun in the Ecliptick for the day given be noted; let the Quadrant be applied to the Vertex, and in that let the observed Altitude of the Sun be marked. Then let the Globe and the Quadrant be moved together until the point of the Quadrant and the noted place of the Sun do meet. The Globe thus remaining, let the intercepted Degrees between the Meridian and the Quadrant of the Vertical point be numbred in the wooden Horizon: let so many Degrees be cut off in the Periphery before described, beginning from the Line of the Plaga of the Sun towards the East or West, as the time of the observation shall be, and let a right Line be drawn through the term or bound of the Rectification and Center of the Circle. This shall be the true Meridian Line.

The invention will be far more easie, and without the use of the Vertical Quadrant, if the Plaga be observed, or a Line drawn in the plain, in which the Sun either rising or setting is beheld: For then a Circle being again described, let the place of the Sun be brought to the Horizon, and let the intercepted Degrees between the place of the Sun, and the North or South be numbred; let so many Degrees be cut off in the Periphery described from the Line drawn; and let a right Line be drawn through the term or bound of the Rectification and Center. This shall be the true Meridian Line.

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Proposition VIII.

To place a Globe, so that the Cardines of the same may respect the Cardines of the Earth: that is, that the Brazen Meridian may be seated in the true Meridian of the place.

Let the Meridian Line be found in that plain on which the Globe standeth, and let the Globe be so placed that the Brazen Meridian may exactly hang over the Meridian line: so the Globe shall be fixed according to the Plaga or Climates of the World. Or let the Mariners Compass be placed at the foot of the Globe, and let the Globe, with its foot, so long be moved in the plain, until the Brazen Meridian and the Meridian line of the Compass, be found to be in the same plain: so the Globe shall be again constituted according to the Plaga or Climates of the Earth; that is, so that the North part of the Globe, shall have respect to the North part of the Earth; the South to the South, East to the East, and West to West.

A Problem may be propounded concerning Geographical Maps, (and the use is also in the Art of Navigation) viz. so to place them on a plain, that the Northern places of them may look towards the North of the Earth, the Southern to the South, and the like. The Solution is easie, if that a Meridian line may be found in that plain, or if you have an accurate Mariners Compass: for the Side line of the Map shall be placed on the Meridian line of the plain; and so the Map shall have its required situation.

Proposition IX.

To find the Latitude of the place from the Heaven, or the Elevation of the Pole above the Horizon of any place, by the benefit of the Stars.

Although the Latitude of a place exist in the Superficies of the Earth, viz. its distance from the Equator; yet it cannot be found without the Stars. The modes of finding the same are various.

First, Let the Altitude of the Sun above the Horizon be observed, when he cometh to the Meridian line, and let its complement or distance from the Vertex of the Sun, be taken. For this, take away the declination of the Sun to the day of the Observation; that is, if that the Sun be fixed in the Southern part of the Zodiac; but let it be added, if that it be in the Southern, the residue shall be the Latitude of the place. But the declination of the Sun, that is, his distance from the Equator, in the day of the Observation, is found from the place of the Sun, and that from a Table of the declination of the parts of the Ecliptick, or from the Globe; for let the place of the Sun be noted in the Globe at the day of the Observation, and brought to the Meridian, the degrees of the Meridian being intercepted between the Equator and the place of the Sun, exhibit the declination of the Sun at the day given.

Secondly, The Sun rising or setting, by the benefit of the Globe, the Latitude shall thus be found: Let the Plaga, or part in which the Sun riseth or setteth, be observed, which Mariners are accustomed to do by their Compass; (but the true Meridian line is required to this.) Let the same Plaga or degree be marked in the Wooden Horizon of the Globe: Let the place also of the Sun in the Ecliptick, for the day of the Observation, be noted; then let the Brazen Meridian in the Crena of the Horizon be turned thereunto, the Pole being more or less elevated, until the noted place of the Sun meet with the noted place of the Horizon: so the elevation of the Pole in the Globe, shall be the same which the place hath, where the Observation was made. The Solution will be more easie by Calculation; but by reason very few Students of Geography understand the solution of Spherical Triangles, therefore I omit the same, which shall also be observed in the following Problem.

Note.

The Mariners
Compass use-
ful.

The Meridian
Line found by
the Stars.

The Latitude
being known,
the Meridian
Line by the
help of the
Globe may be
found out.

Of the placing
the Globe.

To find the
Latitude of a
place above
the Horizon,
by the Stars.

Note, That in the time of the *Aequinoxes*, when the *Sun* is in the beginning of *Aries* or *Libra*, then this method hath no use, because that then the *Sun*, in one and the same *Plaga* or part, riseth and setteth to all places, viz. in the part of the true East or West, or in the *Plaga* of the *Aequinoctial* rising or setting.

See Scheme.

Thirdly, When the *Sun* shineth at Noon, let the style or pin *AB* be perpendicularly erected on an *Horizontal plain*, and let the Longitude of the shadow *AC*, and the style *AB* be taken in some divided line. Therefore in the right Angled Triangle *ABC* shall be both the noted sides *AB*, *AC*, whence the Angle *ABC* shall be found to be the distance of the *Sun* from the *Vertex*: viz. if that it may be, that as *AB* hath its self to *AC*, so the whole sign hath it self to the *Tangent* of the Angle *ABC*; from thence the *Latitude* of the place shall be found, as we have shewed in the first Mode. But if the Observation be made on the day of the *Aequinox*, then the distance of the *Sun* from the *Vertex* being found, the same is the *Latitude* of the place.

The elevation of the Pole at Rome and Carthage.

So *Pliny* writeth in the 72 Chap. of his *Second Book*, that in the City of *Rome*, the ninth part of the *Gnomon* or pin is wanting unto the shadow; whence the elevation of the *Pole* is collected to be 41 degrees, 25 minutes. At *Carthage* the *Gnomon* hath the same proportion to the shadow, as 11 hath to 7; whence the elevation of the *Pole* is collected to be 32 degrees, 13 minutes.

Fourthly, In the Night time, when the *Stars* can be seen, if we take the Altitude of any *Star* in the Meridian with an Instrument, or from a Table know the declination of the *Stars*; thence with little trouble we shall find the *Latitude* of the place.

For if that *Star* be situate between our *Vertex*, and the *Semicircle* of the *Aequator* elevated to us, we must then add:

But if the declination of the *Star* be Northernly, and the *Star* seated between our *Vertex* and the *Polaris* *Star*, we must then subtract from that declination the distance of the *Star* from our *Vertex*; the remaining number shall be the *Latitude* of the place.

If that the Declination be Northern, and the *Star* be seated between the *Pole* *Star*, and the proximate part of the *Horizon*, the complement of the declination shall be added to the found out *Latitude* of the *Star*. The aggregate number shall give the *Latitude* of the place, or the elevation of the *Pole*.

If the Declination shall be Northern, and the *Star* is placed between our *Vertex*, and that part of the *Horizon* remote from the *Polaris* *Star*; that declination shall be added to the distance of the *Star* from the *Vertex*, or to the Complement of the Altitude. The aggregated number shall be the *Latitude* of the place.

Finally, if that the Declination of the *Star* be Southern, this must be deducted from the Complement of the Altitude observed; and the remaining number will shew the *Latitude* of the place. Neither in this casualty doth any variety occur, as in the *Star* of the Northern declination; which is to be understood of the places situated between the *Aequator* and the North *Pole*: for it is otherwise with the places which lye between the *Aequator* and the South *Pole*.

Fifthly, If the *Plaga* or part be observed, in which any *Star* riseth or setteth, the *Latitude* of that place may be found by the benefit of the *Celestial Globe*, according to what we have said in the third Mode.

Sixthly, If that you have not a Table of the Declination of the *Stars* at hand, you may obtain the thing required, if that you observe some *Stars* not setting, viz. such a one, which in its whole circumrotation is remaining above the *Horizon*: for those *Stars* come twice to the Meridian, and therefore their *Meridian altitude* is twofold, one greater, and the other less. Both these must be observed, and the half difference must be added to the lesser Altitude, or taken from the greater: so we shall obtain the *Latitude* of the place.

Seventhly,

Seventhly, If we enquire not after an accurate *Latitude* of a place, but would be contented with one, not much receding from the true; we must take the Altitude of the *Polaris* *Star*, when that it hath far departed from the Meridian: for that is equal to the *Latitude* of the place.

Proposition X.

The Places of the Earth situated under the *Aequator*, have no *Latitude* or elevation of the *Pole*; but both the *Poles* lye in their *Horizon*. The places under the *Pole* have the *Latitude* of 90 degrees, viz. the *Pole* in the *Vertex*, and the *Aequator* in the *Horizon*. The places between the *Poles* and the *Aequator*, have a less *Latitude* than Ninety Degrees.

The places under the *Aequator* have no *Latitude*.

The truth of this Proposition is evident, therefore it needs no Explanation.

Proposition XI.

If we are either on the Sea or Land, and know not the place where we are, let the *Latitude* be found to exhibit that *Parallel* in the *Globe*, that we may be certain that we are in one point of it.

This is done after the same manner, that we have shewed in the sixth Proposition, viz. a *Parallel* must be described at the given or observed *Latitude*: and this is the *Parallel* demanded. The same is also easie in Maps.

C H A P. XXIV.

Of the division of the Earth into Zones; and the Celestial Appearances in the divers Zones.

Proposition I.

From the proper or Annual motion of the Sun, there ariseth a certain division of the Superficies of the Earth into five parts or Zones.

SEeing that the *Sun* doth not always continue in the *Aequator*, but declining from it, describeth by his Motion a path which cutteth the *Aequator*, so that his greatest declination is in $23\frac{1}{2}$ degrees, as well towards the North from the *Aequator*, as towards the South, in which declination he describeth the Tropicks of *Cancer* and *Capricorn*: thence it is, that he is not perpetually vertical to the Places lying under the *Aequator*; neither doth he always keep one distance from other places, for sometimes he is more nigh, and sometimes more remote from a certain place; and variously changeth heat, cold, rain, and other conditions of the Seasons. These which we have now spoken of, may be shewed as well on the *Globe*, as in Maps.

The division of the Earth into 5 Zones. See Scheme.

A Zone is termed a part of the Earth included within the Tropick and the *Polaris* Circle. And because there are two Tropicks, and two *Polaris* Circles; thence it cometh to pass, that there are five Zones, viz. 1. *Torrid*, 2. *Temperate*, and 2. *Frigid*.

A Zone, what

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The

Torrid zone.

The *Torrid Zone* is that part of the Earth, which lieth between the Tropicks of *Cancer* and *Capricorn*.

Temperate Zones.

The *Temperate Zones*, which lye between one of the Tropicks, and the adjacent Polary Circle: the Northernly Temperate Zone, is that which lieth between the Tropick of *Cancer*, and the *Artick Circle*: the Southernly temperate Zone, is that which lieth between the Tropick of *Capricorn*, and the *Antartick Circle*.

Frigid Zones.

The *Frigid* or *Cold Zones*, are those parts of the Earth which lye about the Poles, even to the Polary Circles; and they are as well Northernly, as Southernly, cold Circles.

Proposition II.

The Places, according to their Latitudes, in what Zones they are in.

Those places of the Earth, whose Latitude is less than 23 degrees and 30 minutes; they lie in the *Torrid Zone*.

Those whose Latitude is 23 degrees and 30 minutes; they lie in the Tropicks, viz. in the extremity of the *Torrid Zone*.

Those whose Latitude is greater than 23 degrees and 30 minutes, and less than 66 degrees and 30 minutes; they lie in the *Temperate Zone*.

Those whose Latitude is 66 degrees and 30 minutes; they lie in the Polary Circles, viz. in the term of the *Temperate Zone*.

Those whose Latitude is greater than 66 degrees and 30 minutes; they lie in the *Frigid Zones*.

These are manifest from the definitions of the *Tropical* and *Polary Circles*, which we have treated of in the 23th Chapter.

Proposition III.

The Æquator of the Earth passeth through these Places.

Places which the Æquator passeth through.

Through the Island of *St. Thomas* in the great Bay of *Africa*, which is called the *Æthiopian Ocean*.

Through *Æthiopia*.

Through the *Indian Ocean*.

Through the middle of *Sumatra*.

Through the *Chersonesus* of *Malacca*, and other Islands in the *Indian Ocean*.

Through the *Moluccas* themselves, and the *Pacifick Ocean*.

Through the entrance of the Province of *Peruana*.

By the Lake *Parima*.

Through the *Atlantick Ocean*, even to the Island of *St. Thomas*.

The *Æquator* divideth the *Torrid Zone* into two equal parts, so that they may deservedly be termed two *Torrid Zones*, one Northern, and the other Southern.

These Places lie in the Torrid Zone.

Places which lie in the *Torrid Zone*.

The greatest part of *Africa*, the *Indian Ocean*, *Abyssine*, part of *Arabia*, *Cambaja*, *India*. The Isles of the *Indian Sea*, *Java*, *Ceylan*, *Peruvia*, *Mexico*, great part of the *Atlantick Ocean*, the Island of *St. Helena*, *Brazil*, *New Guinee*.

Places which the Tropick of *Cancer* passeth through.

The Tropick of *Cancer* passeth through these places, viz. through the Confines of *Lybia*, and other places in the Inland *Africa*; through *Syena* in *Æthiopia*. Thence passing the *Red Sea*, beyond the Mountain *Sinai*; and *Mecca*, the Birth-place of *Mahomet*, it passeth through *Arabia Felix*: hence it entereth the *Indian Ocean*, and toucheth the borders of *Persia*, and passeth over *Cambaja*, *India*, and the Borders of *China*, until it come into the *Pacifick Sea*; which being passed over, it falleth in with *California* into the

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the Kingdom of *Mexico*; and again entring into the *Atlantick Ocean*, passing the Gulph of *Mexico*, it sweepeth the Coast of the Isle of *Cuba*, and thence returneth to the Occidental shoar of *Africa*.

The Tropick of *Capricorn* passeth through very few places of the Earth; its greatest part lying in the Sea. The places through which it passeth, are, through the Tongue of *Africa*; through *Monomotapa*, *Madagascar*, the *Indian Ocean*, *New Guinee*, the *Pacifick Ocean*, *Peru*, *Brazil*, and through the *Atlantick Ocean*.

Places which the Tropick of *Capricorn* passeth through.

Many places in the Earth lie in the *Northern temperate Zone*, and those almost all known and inhabited; viz. all *Europe*, all *Asia*, (except part of *India*, *Malacca*, and the Isles of the *Indian Ocean*), great part of *America Septentrionalis*, and part of the *Atlantick* and *Pacifick Ocean*.

Places situate in the Northern and Southern temperate Zones.

In the *Southern temperate Zone* few places lie, and those not fully known, with a large portion of the Sea; viz. part of the *Prominent*, part of *Africa*, *Monomotapa*, a great part of *Terra Magellanica*, part of *Brazil*, *Chili*, the Streights of *Magellan*, and a great part of the *Atlantick*, *Indian*, and *Pacifick Ocean*.

The *Artick Polary Circle* passeth almost through the middle of *Iceland*, through the Upper *Norway*, the *North Sea*, *Lapland*, the Bay of *Russia*, *Samojeda*, *Tartaria*, *America Septentrionalis*, and *Groenland*.

Places which the *Artick* and *Antartick Polary Circles* pass through.

The *Antartick Polary Circle* passeth through *Terra Magellanica*; of which we have little or no knowledge at this day.

In the *Cold Northern Zone* lieth part of *Iceland*, the Utmost part of *Norway* and *Lapland*, *Finnmarch*, *Samojeda*, *Nova Zembla*, *Groenland*, *Spitzberga*, and some part of *America Septentrionalis*, not yet discovered.

Places which lie in the cold Northern, and Southern Zones.

In the *Cold Southern Zone*, what it is, whether Land or Water, is unknown.

What we have spoken on hitherto, are shewed by the Globe and by the Maps; but they are proved by the Tables of the Latitude of Places, which are made by Observations.

Proposition IV.

In the Places which lye in the Tropicks, the Sun once in every year is only vertical in the Meridies or Noonstead; but in places lying under the Torrid Zone, he is vertical twice a year, viz. two days, which are equally distant from the Longest day. But in Places without the Torrid Zone, and situated without the Tropicks, the Sun never in any day of the year is vertical.

For when the *Sun* is in the first degree of *Cancer*, which is about the one and twentieth of *June*, then he describeth the Tropick of *Cancer* in the Heaven; and by how long a space this Tropick is distant from the *Celestial Æquator*, by so much the *Terrestrial Tropick* of *Cancer* is distant from the *Terrestrial Æquator*; and so the *Terrestrial Tropick* is subject to the *Celestial*, and the *Sun* therefore becometh vertical to the Places seated in the Tropick of *Cancer*. In the places of the Tropick of *Capricorn*, it happeneth after the same manner about the twentieth of *December*, the *Sun* then entring the Sign of *Capricorn*. These are manifest from the Globe; and from Maps.

The Sun, how oft, and in what places, is vertical.

But for further Explanation, to shew the *Sun* to be vertical twice a year in a place:

F f 2

Take

Explanation.

Take a place lying in the *Torrid Zone*, and let the place taken be brought to the *Meridian*, and a pointed Chalk being applied, let the *Globe* be turned round, that the Parallel of that place may be described, that will cut the *Ecliptick* in two points, which will be equally distant from the first degree of *Cancer* or *Capricorn*. And the *Sun* being in these points of the *Ecliptick* will be vertical in the place taken; for the Parallel which the *Sun* in those days describeth, will directly hang over the Parallel of the place described. Wherefore the *Sun* will pass through the *Vertex* of that place, and therefore will be vertical to it in the *Meridies* of these two days; but not so in other days. Now that it is only vertical in the *Meridies* unto places, is perspicuous from his diurnal revolution.

Now that in places situate without the *Torrid Zone*, and the *Tropicks*, the *Sun* is never vertical, is manifest, by reason that no Parallel of the *Sun* is imminent over the Parallel of those places: for the *Sun* is never vertical in the *Temperate* and *Cold Zones*.

Proposition V.

To places seated in either of the *Frigid Zones*, the *Sun* every year some day or other setteth not, and so many days riseth not; and that so many days the more, by how much those days are nigh the *Poles*: so that in a whole place of the *Pole*, for six Months space it setteth not, and ariseth not to another. But in places in the *Artick* or *Antartick Circle*, the *Sun* setteth not, one only day in the year, and one day ariseth not; but other days it setteth and riseth.

The rising and setting of the *Sun* in places seated in the *Frigid Zones*.

Take any place you please of the *Frigid Zone* in the *Globe*, and let the *Pole* be so elevated as the Latitude of the place requireth, or that the *Wooden Horizon* may become the *Horizon* of the place, as in the preceding Chapter. Then let a pointed Chalk be applied to the *Crena* of the *Horizon*, which is more nigh the *Pole* elevated; and let the *Globe* be turned round, so that the Chalk may mark some Parallel of the *Aequator*. This Parallel shall cut the *Ecliptick* in two points, which shall be equally distant from the first degree of *Cancer*; and the *Sun* being in any of these points of the *Ecliptick*, and in all Intermedial points, shall not set; which hence is manifest, because the Parallels of the *Sun*, existing in these points, remain above the *Horizon* in the whole Circumrotation.

On the contrary, If that the Chalk so pointed be applied unto the other *Crena* of the *Horizon*, and the Parallel be described, we shall find those points of the *Ecliptick*, or the *Arch*, about the beginning of *Capricorn*; in which, whilst the *Sun* is, he doth not arise to that place of the *Frigid Zone*, but remaineth beneath the *Horizon*. The contrary appeareth, if the place be taken in the cold *Antartick Zone*.

What we have said of the places lying under the *Artick* or *Antartick Circle*, is shewed after the same manner, viz. the *Pole* must be elevated to 66 degrees, 30 minutes: so the *Wooden Horizon* shall be the *Horizon* of any place lying under the *Artick Circle*. And it will be manifest, that the *Tropick* of *Cancer* setteth not, and the *Tropick* of *Capricorn* ariseth not, but that they touch the *Horizon*; therefore the *Sun* in the first degree of *Cancer* setteth not, and in the first degree of *Capricorn* ariseth not; but on both days radiateth the *Horizon*: But in other degrees of the *Ecliptick* it will arise, and set, which may be discerned by the *Oriental* and *Occidental* points of the *Ecliptick*.

Proposition

Proposition VI.

In places seated without the *Frigid Zone*; that is, in the *Temperate* or *Torrid Zones*, the *Sun* every day riseth and setteth.

Take any place in the *Globe* lying without the *Frigid Zones*, and *Polaris Circles*, and let the *Poles* be elevated according to its Latitude, so that the *Wooden Horizon* doth become the *Horizon* of that place: If that now you turn the *Globe*, it will be apparent that all the points of the *Ecliptick* do rise and set; that is to say, sometimes they are depressed beneath, and sometimes elevated above the *Horizon*. The *Sun* then being in those points doth the same.

In places without the *Frigid Zones*, the *Sun* riseth and setteth every day.

Proposition VII.

A place being given that is seated in the *Torrid Zone*, to find those two days in the which the *Sun* is vertical to that place.

Let the place given be brought to the *Brazen Meridian*, and let the degree of Latitude be marked with Chalk; then move the *Globe*, until one point or other of the *Ecliptick* do pass through this noted point of the *Meridian*. Let these two points be noted, for they are those in which when the *Sun* is, he is vertical to the place given: let also the days of the Year be found, in which the *Sun* occupieth those points of the *Ecliptick*, which may be done either in the *Wooden Horizon*, or from a Table, or by the method of the 22th Chapter, those will be the sought for days; whereof one will be before the *Solstice*, the other after it, in which the *Sun* is vertical to that place, when he cometh to the *Meridian*.

This Problem is also easily resolved in *Universal Maps*.

For if a Parallel line be drawn through the place given to the *Aequator*, right, or circular from the *Pole* of the Map in Crooked lines; this being drawn will cut the *Ecliptick* in two points, from which the days of the year will be manifest.

But if you require the resolution of the Problem on a *Globe*, or on *Maps*, you ought to know the Latitude of the place; with this enter the Table of the *Declination*, placed in the 22th Chapter; and except the days in which the *Sun* hath such a declination: they shall be the days required.

Proposition VIII.

A place being given, seated in the *Frigid Zone*, to shew those days in which the *Sun* doth not set to that place, and in what days he riseth not: Also the first and last of those days in which he setteth not to that place, or in which he riseth not to the same.

In the *Globe*, let the place given be brought to the *Meridian*, and let the *Pole* be elevated for the Latitude of the place: then turning the *Globe* round, let the points of the *Ecliptick*, which set not, be marked in the *Crena* of the *Horizon*, and in the other *Crena*, those that do not arise. Therefore that degree, which is between the first degree of *Aries* and the first of *Cancer*, will shew the first day, in which the *Sun* setteth not to that place: and the other degree, between the first of *Cancer* and the first of *Libra*, will shew the last day. And in these days the *Sun* radiateth the *Horizon*, yet he will remain above it: which yet must be understood of the Center of the *Sun*. But in the Intermedial days, he will perpetually remain above the *Horizon*. By the same method, those days will be found, in which the *Sun* will remain beneath the *Horizon*.

Of the rising and setting of the *Sun* in the places seated in the *Frigid Zones*.

This perform
ed by the
Globe.

Also by Maps.

Likewise by a
Table of the
Declination.

Horizon, in the opposite part of the year, and the first and last day of them.

By a more easie method this may be done upon the Globe, yet with less manifest demonstration. As many *degrees* as the place given is distant from the *Pole*, let so many be numbred in the Meridian from the *Aequator*, and let the term be noted on both sides of the *Aequator*; then the Globe being turned round, observe what points of the *Ecliptick* pass through the noted points of the Meridian: For those that are near to the beginning of *Cancer*, and the *Arch* comprehended, will shew the days of the perpetual stay of the *Sun* above the Horizon of the place given. The other *Arch* within the points, about the beginning of *Capricorn*, will shew the days of the perpetual absence of the *Sun* beneath the Horizon of the place given.

In *Maps*, let the Complement of the *Latitude* of the place, or distance of the place from the *Pole*, be numbred in the Side-line of the Map from the *Aequator* towards both the *Poles*, and the Parallel to the *Aequator* be described through the term of the Numeration, whether the Map consists of Strait, or Crooked lines, as we have shewed in the forecited Propositions. These Lines so drawn shall cut the *Ecliptick* each in two points: these Points will shew the first and last day of the perpetual stay of the *Sun* above the Horizon, and the *Arch* intercepting all the days of the perpetual stay. The other Line in the opposite point of the *Ecliptick*, will shew the perpetual delitescence of the *Sun* beneath the Horizon.

By a Table of the *Declination* it is thus done; If the *Latitude* of the place be known, enter with the Complement of the *Latitude* the Table of the *Declination*; and seek that declination, such as is the *Latitude* of the place, which you shall find four times, and take those four days in which the *Sun* hath that declination. Two of them, whereof one is between the 21th of *March*, and the 21th of *June*; the other, the 21th of *June*, and the 21th of *September*, are the first and last of the perpetual stay of the *Sun* above the Horizon. The other two, of the perpetual stay beneath the Horizon of the place propounded; the Intermedial days will be of the perpetual stay of the *Sun* above, or under the Horizon.

Proposition IX.

The day of the year being given, to find those places of the Earth in the Globe, or the Map, in which the Sun that day is vertical in the Meridies, viz. one place after another.

From the day given, the place of the *Sun* in the *Ecliptick* may be found, according to the method of the 22th Chapter.

In the *Globe*; Let the place of the *Sun* be brought to the point of the *Meridian*, which it hangeth over, let the *Globe* be turned round: so all the places, which pass through the marked points, are those which are sought for.

In *Maps*; Let the place of the *Sun* in the *Ecliptick* be marked, and through it let a right Parallel of the *Aequator* be drawn, or otherwise a crooked; as the Table shall either consist of strait or crooked Lines. So all the places of this Parallel shall be those demanded; but it ought to be in the Hemisphere of the *Maps*.

By the Table of the *Declination* delivered in the precedent Chapter, the *Latitude* of those places may be found.

Proposition

Proposition X.

The day of the year being given, to find those places of the Earth, in which the Sun, viz. his Center doth not set, so that this day may be the first of all those, in which the Sun doth not set in those places: And to find those places in which the Sun doth not arise, with the same condition.

The day must be one of those, which fall between the 21th of *March*, and the 21th of *June*; or the 21th of *September*, and the 21th of *December*.

First of all, let the place of the *Sun* in the *Ecliptick* at the day given be found, then the rest will follow so.

In the *Globe*; Let the place of the *Sun* in the *Ecliptick* be brought to the *Meridian*; and how many *degrees* are intercepted between that and the *Aequator* in the *Meridian*, let so many be numbred from the *Pole* towards the *Aequator*; or how many *degrees* are between the place of the *Sun* and the *Pole*, let so many be numbred from the *Aequator* towards the *Pole*; let the Term of the Numeration be noted with a Chalk; or let a Parallel be drawn to it.

All the places seated in this Parallel satisfy the first demand; but those places which are sought for in the second place, shall be in the Parallel equally distant from the other *Pole*.

In *Maps*; Let the Declination of the *Sun* noted, be numbred from the *Pole* towards the *Aequator*, in the Lateral line, and let the Parallel of the *Aequator* be drawn through the Term. All the places lying in this Parallel of both the *Planespheres* are those demanded: The places of the second demand shall be found in the same *degrees* in the Parallel, distant from the other *Pole*.

In the Tables of the *Declination*, let the *Latitude* be found for the place demanded.

Proposition XI.

To compute the Latitude and Magnitude of all the Zones, in Miles, or some other famous Measures.

The *Latitude* of the *Torrid Zone* is 47 *degrees*, viz. 23 $\frac{1}{2}$ from both parts of the *Aequator*: the *Latitude* of both the *Temperate*, is 43 *degrees*. The *Latitude* of both the *Frigid*, 47 *degrees*. These *Degrees*, if changed into *Miles*, one *degree* being estimated at 15 German miles, the *Latitude* of the *Torrid Zone* will be 705 miles: one of the *Temperate*, 645; and one of the *Frigid*, 705.

The place requireth, that we should now treat of the *Seasons* in the divers *Zones* and places; but because some of them do appertain unto the following Chapter, I have omitted them here.

The day of the year being given, to find those places of the Earth, in which the Sun doth not set, nor arise.

The computation of the Latitude and Magnitude of the Zones in Miles, &c.

CHAP.

CH A P. XXV.

Of the Longitude of the Days in divers Places of the Earth: And of the division of the Earth into Climates, which proceed from them.

Proposition I.

In two Days of the year are the Equinoxes, or the Night equal to the Day in all places of the Earth.

The Days are those in which the Sun entreteth the *Æquator*, whether he describes the same by Motion, or Diurnal circumvolution; which is, when that he entreteth the first degree of *Aries*, and the first degree of *Libra*, viz. on the 21th of *March*, and the 21th of *September*, according to the *Gregorian Kalendar*. Now we shall shew, that on these days the Night is equal to the Day, consisting of twelve hours in all places of the Earth: Now this Day noteth the stay of the Sun above the Horizon; and the Night, the stay beneath the Horizon.

Take any place in the Globe, and let the Pole be elevated for the Latitude of that place, so that the Wooden Horizon may become the Horizon of that place. Then let the first degree of *Aries* or *Libra* be placed in the Oriental Horizon, the *Index* at the twelfth hour of the Horary Circle; then turn the Globe, until the first degree of *Aries* come to the Occidental Horizon, you shall see that the *Index* in the Horary Circle hath passed twelve hours. The same method may be used to manifest the Night, consisting of twelve hours.

In Places situated in the Poles of the Earth, which are only two; the Sun neither riseth nor setteth in these two days of the year, but his Center shall be wheeled round in the Horizon (which is the same with the *Æquator*), so that they shall have at one time both Day and Night. Seeing therefore that in other places, the term of the Days and Nights is a moment, there, on the contrary, the intire revolution or Natural day, is the term or medium of the perpetual appearancy or disappearance of the Sun. And in these two days of the *Equinoctials*, (the 21th of *March*, and 21th of *September*) the half Sun shall be above the Horizon in those two places, and half beneath it. And on the 21th of *March* in the Pole *Arctic*, it shall make the beginning of a long day of six Months; and on the 21th of *September*, shall be the beginning of a long night of six Months, as we shall shew anon: therefore it is no absurdity, that some places for twenty four hours should neither have night or day. Here I shall mention many things peculiar to the Poles above other places of the Earth, viz.

1. The Sun in a whole year only once riseth, and once setteth; that is to say, it riseth in one *Æquinox*, and setteth in the other.
2. They have no *Meridies*, or Midnight, at a certain time; but at all hours they have a perpetual *Meridies* for six Months, or perpetual Night for six Months.
3. No Fixed Stars arise, nor set; but some remain perpetually above the Horizon, and some always beneath it.
4. The Stars keep the same Altitude above the Horizon, and distance from the Vertex, as the Sun also doth in his whole Diurnal circumvolution.
5. No Winds there can be called Northern, for they are all Southern in the *Arctic Pole*; and contrariwise in the *Antarctic Pole*, all Northern, and none Southern, Western, or Eastern.
6. If the Stars and Sun do not move, but the Earth, according to *Copernicus* his Hypothesis, then if the Eye were a point, that it could be seated in the

The Days and Nights in all places are equal in two days of the year.

Several things here noted peculiar to the Poles, above other places of the Earth.

the Pole, all the Stars, Sun, and Moon, would appear immovable in the same *Plaga*.

All these are easily shewed by the Globe.

Proposition II.

In places situated in the Æquator, the days and nights are always equal. In the places of the Poles, there is only one day, and one night in the whole year. Now the day is longer than the night in the North Pole; but in the South, the day is shorter than the night.

Take any place you please in the Globe, you must shew that in every day in the year, the night is equal to the day; that is, that the Sun for so long time remaineth beneath the Horizon, as he doth above it. Take the day of the year as you please, and let the place of the Sun be enquired after to it, which is noted in the *Ecliptick*: then let the place taken be placed in the Vertex, that the Poles may hang over the Horizon; for so the Wooden Horizon shall be the Horizon of the places of the *Æquator*. Let the place of the Sun be brought to the Meridian, and the Parallel described, which the Sun perfecteth that day. Then let the two Points of this Parallel in the Horizon be noted, and it will be manifest, that the Arch of this Parallel above the Horizon, will be equal to the Arch which is beneath the Horizon. And because the Motion of the Sun Diurnal is equal, as that of all the Stars, therefore in an equal time, it will pass through the equal Arches of the Parallels. So that the first part of the Proposition concerning every day is shewed. Now for the shewing of the other part of the places of the Poles, either of the Poles must be placed in the Vertex of the Wooden Horizon, so shall this be the Horizon of the Pole.

And the Globe being turned round, we shall see that one half of the *Ecliptick* remaineth above the Horizon, and the other beneath it. Therefore whilst the Sun is in this, he setteth not, whilst in that he riseth not. And he is more daies in the Northern Semicircle of the *Ecliptick*, than in the Southern by nine daies. Therefore his perpetual stay above the Horizon shall be longer than beneath it of the Pole *Arctic*. But it is otherwise in the *Antarctic* Pole.

Proposition III.

In places lying beneath the Æquator, and the Pole, no days are equal to the nights, except the two days of the Equinoctials, but all the rest are either greater or lesser than the nights.

Let any place in the Globe be taken beneath the *Æquator*, and the Pole, and let the Pole be Elevated according to the Latitude of the place, and any day of the year being taken, (except the daies of the *Æquinoxes*). Let the place of the Sun for that day be found, and so be noted in the *Ecliptick*, and being brought to the Meridian, let the Parallel be described, which the Sun maketh by his Diurnal Circumrotation. Let the two Points of this Parallel in the Horizon be noted, and it will be manifest, that the Arch of the Parallel above the Horizon is greater or lesser than the Arch of the Parallels lying hid beneath the Horizon, and so the day, or stay of the Sun above the Horizon, will be greater or lesser than beneath it.

Or in the place of the Sun brought to the Oriental Horizon, let the *Index* be placed above the 12th hour of the Horary Circle, and let the Globe be turned round, until the place of the Sun doth come to the Occidental Horizon. The *Index* in the Circle will shew the number of the hours of the day. Then let the *Index* be brought back to 12, and the Globe turned round, until the place of the Sun passing beneath the Horizon, returns to the

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East.

The days and nights are always equal in places seated in the *Æquator*.

The days are not equal to the nights in places lying under the *Æquator*.

East. The *Index* again will shew the number of the hours of the night, and the inequality will be manifest.

Proposition. IV.

A Place being given in the Globe, or the Latitude of a place being given, and the day of the year also given, to find how many hours the Sun in that day remaineth above the Horizon of that place, and how many beneath it; that is, to find the Longitude of the day and night for that place at the day given.

Let the place of the *Sun* in the *Ecliptick* at the day given be found. And let it be noted in the *Ecliptick* of the *Globe*. Let the Pole be Elevated according to the Latitude of the place given. Let the place of the *Sun* be brought to the Oriental *Horizon*, and the *Index* of the *Circle* to 12, let the *Globe* be turned round, until the place of the *Sun* come to the Occidental *Horizon*; the *Index* will shew the number of the hours of the day; the other at 24 will shew the hours of the night.

Proposition. V.

In all places seated between the Equator, and the Pole Arctick, the longest day and shortest night, is when the Sun enters the first degree of Cancer; and the shortest day, and longest night is when the Sun entresth the first degree of Capricorn. But in the places seated between the Equator and the Antarctic Pole it is just contrary.

To shew this on the *Globe*, take what place you please, and let the Pole be Elevated according to its Latitude. Then according to the preceeding Proposition, find out the number of the hours, when the *Sun* is in the first Degree of *Cancer*, then any other point of the *Ecliptick* being taken for any day of the year, let the number of the hours again be found for that day. And it will be manifest, that the number of the hours of the day, when the *Sun* is in the first Degree of *Cancer*, is greater than the number of the hours of another day. And because this other day is taken at pleasure, and in every day the same Demonstration is in force, therefore the day, when the *Sun* is in the first Degree of *Cancer*, is the longest of all daies, and consequently the shortest night.

After the same way we may shew, that the day is the shortest, when the *Sun* is in the first Degree of *Capricorn*, and the nights the longest.

The same Method of Demonstration shall be observed for places situated on the other side of the *Equator*, towards the *Antarctick* Pole.

Proposition VI.

In the Northern places of the Earth, whilst the Sun moveth from the first degree of Capricorn, to the first of Cancer, the days continually encrease: and whilst he moveth from the first of Cancer, unto the first of Capricorn, they continually decrease. But it is contrary in the places Southernly, for they encrease from the first of Cancer, to the first of Capricorn; and decrease from the first of Capricorn, to the first of Cancer.

Take any Northern place you please in the *Globe*, which lyeth between the *Equator*, and the Pole *Arctick*, and let the Pole be Elevated for the Latitude of that place. Then taking two, or more of the Points of the *Ecliptick*, which lie between the first of *Capricorn*, and the first of *Cancer*, the quantity of the day may be found for these Points, or for the *Sun* then

then in those points; And it will be manifest, that the day from the day of the first of *Capricorn* being more remote, will be greater than that day which was more near to the same day of the first of *Capricorn*.

The same way we must use in the daies situated between the first of *Cancer*, and the first of *Capricorn*. And in places seated Southernly, we shall shew the Proposition by such like Method. The Demonstration will be more perspicuous, if that it be done through the Parallel *Arches*, which are above, and under the *Horizon*.

Proposition VII.

If the place of the Earth be more remote from the Equator, or more propinquate to the Pole, than another place, the difference is greater between the daies and the nights, and the longest day is greater, and the shortest night is less. Contrariwise, if the place be more nigh the Equator, the difference between the quantity of the daies and nights is lesser, and the longest day lesser, and the shortest night greater; so that the places near the Equator, or situate in the Torrid Zone, have almost all the days equal to the nights, as the places of the Equator itself, and the excess of the longest day above that of the Equinoctial about one hour.

Take in the *Globe* two places, one more remote from the *Equator*, the other more nigh, and take what day of the year you please (except the *Equinoxes*) you may shew that in the place more remote, the day more differeth from the quantity of the night, than in a place more near the *Equator*.

Let the place of the *Sun* in the *Ecliptick* be found at the day taken, and noted in the *Ecliptick* of the *Globe*. Then let the Pole be Elevated for the Latitude of the Earth of the one place taken, and let the Longitude of the day and the night, (or the stay of the *Sun* above or beneath the *Horizon*) in that place at the assumed day be found by the sixth Proposition of this Chap. Then let the Pole be Elevated for the Latitude of the other place; and let the Longitude of the day and night, or stay of the *Sun* above or beneath the *Horizon*, be found at the same assumed day. Let this Longitude so found, be compared with the other, and the truth of this Proposition will be manifest.

So that the place more remote hath all the daies of one half year longer, than the place more nigh. On the contrary, it will have all the daies of the other half year shorter.

Corollary, What hath been shewed of all the daies of the year (except the *Equinoctials*) the same is also of force in the quantity of the longest and shortest day. And in this it is most observed, and noted, because here is the greatest difference between the Longitude of the night and day, not so great in other daies of the year. Therefore of the two places, that which is more remote from the *Equator*, or more near to the Pole, hath the longest day greater than the place more vicine to the *Equator*; and the shortest day lesser.

Proposition VIII.

All places of the Earth situated in one of the same Parallel, have all the days of the year equal, and therefore the same quantity of the longest day.

The Demonstration of this Proposition is easie by the *Globe*. Let any Parallel be taken in the *Globe*, and what places you please. Let the Pole be Elevated for the Latitude of this Parallel, and let any Parallel of the *Sun* be taken for any part of the year: Out of the Degree let the Tropick of *Cancer* be taken for the longest day; let one of the places taken be constituted under the *Meridian*, that so it may possess the *Vertex* of the *Horizon*; or that the Wooden *Horizon* may be the *Horizon* of the place. Then let the *Arch* of the Tropick above

G g 2

the

According to the situation of the places of Earth to the Equator and the Pole, the daies and nights are longer and shorter.

The equality of the daies according to their situation in one of the same Parallel.

Latitude of places.

Of places seated between the Equator and the Pole Arctick. The daies longest, and nights shortest, when the Sun entresth into Cancer, and daies shortest, and nights longest when into Capricorn.

Of the encreasing and decreasing of the daies in the Northern places of the Earth.

the *Horizon* be noted, or the two points of the same which are in the *Horizon*; for, the *Arch* in these, denoteth the stay of the *Sun* above the *Horizon* of the place; then let the second place be brought to the *Meridian* or *Vertex*; that the *Wooden Horizon* may be the *Horizon* of it, and let the *Arch* of the *Tropick* above the *Horizon* again be marked, which if it be compared with the former, we shall find that they are equal. The same may be shewed also by hours on the *Horary Circle*.

Therefore the *Sun* remaineth an equal time above the *Horizons* of those places, and therefore the daies shall be equal, as also the nights.

Definitions.

From these aforesaid *Propositions*, the *Original* of the division of the *Earth* into *Climates*, is easily to be understood.

For a *Climate* is said to be one part of the *Earth* of those parts into which the *Superficies* situated between the *Aequator* and the *Pole* is so cut by drawn *Parallels*, that the longest day in the *Parallel* more remote from the *Aequator*, exceedeth the longest day of the *Parallel* more near the *Aequator* in a certain part of an hour, or number of hours. *Viz.* Half an hour in places situated even to the *Artick Circle*; in other places a whole hour, or some hours, and daies.

The beginning of a *Climate* is called a *Parrallel*, with which the *Climate* begineth, and is more nigh the *Aequator*: The end of a *Climate* is called a *Parallel* terminating the *Climate*.

The middle of a *Climate* is called a *Parallel*, drawn almost through the middle *Superficies* of a *Climate*, so that in that the longest day exceedeth the longest day of the beginning of a *Climate*, by a quarter of an hour, or an half difference, wherein the longest day of the end of a *Climate*, exceedeth the longest day of the beginning of a *Climate*.

A *Parrallel space*, is said to be that, which the middle *Parrallel* of a *Climate* comprehendeth, with the beginning, or end of a *Climate*.

Proposition IX.

If more places of the Earth be taken from the Aequator, towards the Pole, whose distance from the Aequator equally augmenteth, from one degree, to 10, 20, 30, 40 degrees. The longest days in these places shall not be equally greater, or not equally augment; but they shall more augment in places more remote, and where the place is more near to the Pole.

To shew the Verity of this *Proposition* by the *Globe*, let places be taken remote from the *Aequator* towards the *Pole* by an equal increase of distance, *viz.* for conveniency, *Parallels* of 10, 20, 30, 40, 50, 60 degrees of *Latitude*. For these *Parallels* in the *Globe*, let the *Pole* be Elevated to the *Latitude* of 10 degrees, and the first degree of *Cancer* being brought to the *Oriental Horizon*, and that being noted; let the point of the *Tropick* be also noted, which then is in the *Occidental Horizon*. For the *Arch* of the *Tropick* then being above the *Horizon*, sheweth the stay of the *Sun* above the *Horizon* of the place 10 degrees of *Latitude*. The hours of this his stay may also be known by the *Index* and *Horary Circle*.

Then let the *Pole* be Elevated according to the *Latitude* of the second place 20 degrees, and the first degree of *Cancer*, being again brought to the *Oriental Horizon*, let the point of the *Tropick* be noted in the *Occidental*: for the *Arch* above the *Horizon* will again note the stay, which also may be known by the *Index*, and the *Circle* in the Hours.

The

The same may be used with places whose *Latitude* is 40, 50, 60, 70 degrees, and the like; which being done, let the *Diurnal* hours of the *Suns* stay above the the *Horizon*, or the *Arch* of the *Tropick* be compared, and it will be manifest, that the quantity of the longest day doth much more increase in places more remote, than in the places more adjacent to the *Aequator*, and therefore the encrease of the longest day doth more augment, than the encrease of the distance of the places from the *Aequator*.

Note, what hath been said, and shewed concerning the longest day, that is true of all the daies of one half of the year, and is demonstrated after the same manner, if instead of the *Tropick* of *Cancer*, the *Parallel* of the place be taken. And therefore although *Generals* must be delivered generally, yet because the *Doctrine* of *Climates* especially requireth the Explication of the increase of the longest day, therefore we do not observe in this *Doctrine* that Law,

Proposition X.

If so many places or Parallels are so taken between the Aequator and the Pole, that the longest day of one place, exceedeth the longest day of the Vicine place, (which is more nigh the Aequator) every where equal in excess, or that the longest day equally may encrease, these Parallels shall not equally be distant one from another, (viz. every vicine Couple) but these which are more remote from the Aequator, shall have a less distance than those more near the Aequator.

The truth of this *Proposition* is shewed from the precedent, for if these *Parallels* should be equally distant from one another, *viz.* every two *Vicine*, the quantity of the longest day in these *Parallels* would not Augment by an equal encrease, as we have here shewed. And it is now laid down that the places or *Parallels* so taken equally encrease, that the longest day may equally increase in them; wherefore every two *Vicine* or near *Parallels*, shall not so equally be distant one from another, but many *Parallels* being taken from the *Aequator* towards the *Pole*, on this condition, that the longest day may equally encrease. These *Parallels* shall not be equally distant from one another, but the distance of the third from the second, shall be lesser than the second from the first, that of the fourth less from the third, that of the fifth less from the fourth, and so forwards.

Corollary, and because that many of the *Climates* are so taken, that the longest day in the final *Parallel* of the *Climate*, exceedeth the longest day of the beginning at the *Climate* by half an hour; it followeth from this *Proposition*, that the *Climates* more remote from the *Aequator*, are less broad, or more narrow, then these more near the *Aequator*; and therefore the *Latitude*, and *Magnitude* of the *Climates*, decreaseth towards the *Pole*. Hence it cometh to pass, seeing that the *Climates* at length would become very narrow towards the *Pole*, if that the same excess should be kept, *viz.* the excess of half an hour, so that *Geographers* define the bounds of the Northern *Climates* not by half an hour, but first by whole hours, and then by whole daies.

Pro:

Observations concerning a Climate.

Touching the length of daies of Places taken from the Aequator towards the Pole.

Of Parallels between the Aequator and the Pole.

Proposition XI.

The number of the hours of the longest day being given in any place or Parallel of the Earth, to find the Latitude of the place, or Elevation of the Pole of this Parallel, and to exhibit the Parallel it self in the Globe; or to exhibit those places where the longest day is so great.

For the finding the Latitude of a place, &c. The longest day in all Northern places, is when the Sun is in the first Degree of Cancer.

Let the place of the Sun of the longest day, be brought to the Meridian, Let the Index be brought to the 12th. hour of the *Horary Cycle*: let the Globe be turned, until the Index shew that hour of the Cycle, from which the given number of the longest day is denominated, and then let the point of the Tropick in the Meridian be noted. Then let the first degree of Cancer be brought to the Oriental Horizon, and the Meridian in the Grena, be so moved to the Pole, Elevated or depressed, until the other noted point of the Tropick be in the Occidental Horizon; but so that the first degree of Cancer be yet in the East: which being done, number the Degrees of the Elevation of the Pole. For that is the sought for Elevation, or Latitude of the Parallel, which you shall find in the very Globe it self, if you number so many Degrees in the Meridian from the Equator towards the Pole, and a Chalk being applied, you may turn round the Globe to the term of the Numeration. For the described Parallel is that which is sought. The Probation of the Method is easie.

Proposition XII.

The number of some days being given, to find out the Latitude of the places, or Parallels, and to exhibit the place of the Frigid Zone on the Earth, when the Sun for so many days setteth not, and for so many more ariseth not.

Further concerning the Latitudes of places.

Let the number of the daies be divided in half, and let so many Degrees be numbred in the *Ecliptick* from the first Degree of Cancer, as that divided or half number is, or as many Unites as this hath, (the Numeration may be made from both parts of this beginning.) Let the term be noted with Chalk, if the daies be more than thirty; the number of the Degrees must be taken lesser than an Unite. Then let this noted point be brought to the Meridian, and let the Degrees interrupted between that and the Pole be numbred. For these are the sought for Elevation of the Pole, or Latitude of the places, wherein so many daies as are given, the Sun setteth not, and in so many daies riseth not. You shall find the very places and Parallels in the Globe, if that you number the found out Latitude from the Equator, towards the Pole in the Meridian, and design the Parallel by Chalk applied to the Term. For this is that sought for, and it containeth all the places sought for.

For the Demonstration of this Solution, let the Pole be Elevated for the Latitude of the places found out, and it will be manifest, that the noted Degrees of the *Ecliptick* about the first Degree of Cancer set not beneath the Horizon, but remain above it. The Sun therefore passing over these points of the *Ecliptick*, setteth not: now he passeth through these points in so many days, as are given, as is apparent by the construction. After the same manner we shall shew the truth of this Solution concerning the daies, in which the Sun doth not arise at all in the places Parallel found.

Corollary,

Corollary, It is easie therefore to find the Elevation of the Pole of those places, or *Climates*, which lie in the *Frigid Zone*, where the longest day encreaseth not by hours, but by a number of whole daies.

Proposition XIII.

To frame or compose a Table of the Climates.

This is called a *Table of Climates*, in which at the beginning, middle and end of every *Climate*, the Elevation of the Pole, or Latitude of the Parallel, and the very quantity of the longest day is found noted, as also the interval of the *Climates*, or distance of the Parallels.

The Construction is easie, for from the order of the *Climates*, the quantity for the longest day for the beginning, middle, or end of every *Climate* is found, by adding $\frac{1}{4}$ of an hour, to twelve hours by a continual Succession.

Then from the quantity of the longest day of every Parallel, is found out the Elevation or Latitude of the Pole of every one of them, according to the XI. Proposition.

Lastly, you have the interval, or Latitude of the *Climates*, if you take the Latitude of the beginning Parallel, from the Latitude of the ending Parallel. All these being noted in the Table, we shall have a Table of the *Climates*, which I have hereunto annexed.

Of the making a Table of the Climates.

A

A Table of the Climates and Parallels.

Climates.	Parallels.	Longest days.		Elevation of the Pole.		The Interval.	
		hours.	min.	deg.	min.		
The first.	The beginning, middle, end, & beginning of the 2.	12	0	0	0	0	1
		12	15	4	15	8	25
		12	30	8	25		
The second.	The middle, the end.	12	45	12	30	8	
		13	0	16	25		
The third.	The middle, the end.	13	15	20	15		
		13	30	23	50	7	25
The fourth.	The middle, the end.	13	45	27	40		
		14	0	30	20	6	30
The fifth.	The middle, the end.	14	15	33	40		
		14	30	36	28	6	8
The sixth.	The middle, the end.	14	45	39	2		
		15	0	41	22	4	52
The seventh.	The middle, the end.	15	15	43	32		
		15	30	45	29	4	7
The eighth.	The middle, the end.	15	45	47	20		
		16	0	49	1	3	31
The ninth.	The middle, the end.	16	15	50	33		
		16	30	51	58	2	7
The tenth.	The middle, the end.	16	45	53	17		
		17	0	54	27	2	49
The eleventh.	The middle, the end.	17	15	55	34		
		17	30	56	37	2	10
The twelfth.	The middle, the end.	17	45	57	32		
		18	0	58	29		
The thirteenth.	The middle, the end.	18	15	59	14		
		18	30	59	58		
The fourteenth.	The middle, the end.	18	45	60	40		
		19	0	61	18		
The fifteenth.	The middle, the end.	19	15	61	55		
		19	30	62	25		
The sixteenth.	The middle, the end.	19	45	62	54		
		20	0	63	22		
The seventeenth.	The middle, the end.	20	15	64	40		
		20	30	64	6		
The eighteenth.	The middle, the end.	20	45	64	30		
		21	0	65	49		
The nineteenth.	The middle, the end.	21	15	65	6		
		21	30	65	21		
The twentieth.	The middle, the end.	21	45	65	35		
		22	0	65	47		
The 21 st .	The middle, the end.	22	15	66	57		
		22	30	66	6		
The 22 ^d .	The middle, the end.	22	45	66	14		
		23	0	66	20		
The 23 ^d .	The middle, the end.	23	15	66	25		
		23	30	66	28		
The 24 th .	The middle, the end.	23	45	66	30		
		24	0	66	31		

The

The *Climates* were wont to be extended no further, because that in the following places the Longest day doth not increase by hours, but by whole Days, or Diurnal revolutions; and it is lost labour to compute them. Notwithstanding the following *Canon* will shew the Elevation of the *Pole*, or Latitude of the Places, where the Longest days increase by whole Months.

Months,	1	2	3	4	5	6
The Latitude of the places	2 deg. min. 56 20	deg. min. 69 30	deg. min. 73 20	deg. min. 78 20	deg. min. 84 0	deg. min. 90 0

Proposition XIV.

To explain the method of other Geographers in reckoning of the *Climates*, and making the *Table* of the *Climates*.

The Ancient *Geographers*, especially the *Grecians*, who supposed only a small portion of the Earth to be inhabited, because that as well the places Northernly, as those of the *Torrid Zone*, they denied, as impossible to be inhabited; therefore they divided only that portion of the Earth, which they knew, into *Climates*, and so only numbred seven *Climates* from the *Aequator* towards the *Pole Artick*, and named them from some noted place, through which the Parallel of the *Climates* passed; viz.

The first *Climate* they called, the Climate through *Meroe*, (which is an Island and City in *Africa*, encompassed by the *Nile*.)

The second, through *Syene*, a City of *Egypt*.

The third, through *Alexandria* in *Egypt*.

The fourth, through the Island of *Rhodes*.

The fifth, through the *Hellepont*. Others through *Rome*.

The sixth, through *Borysthenes*, a famous River of the *European Sarmatia*.

The seventh, through the *Riphaean Mountains* of *Sarmatia*.

The Ancients numbred not the other *Climates* from the other side of the *Aequator* towards the South, because all those places were unknown to them; and many thought, that the Sea possessed all the *superficies* of the Earth; Which, seeing it seemed somewhat improbable to the latter, these also numbred the *Climates* from the other side of the *Aequator*: and they named them, not from any noted places, (for they had no knowledge of any,) but by the same appellations with those of the Northern, only preposing the Preposition *anti*, as the Climate *anti dā Meroē*; as if you should say, the Climate opposite to the Climate through *Meroe* or *Syene*, &c.

But when through progress of time, they discovered many parts of the Earth lying towards the *South Pole* to be inhabited, many more *Climates* were numbred and constituted. Some named the eighth Climate from the *Palus Maotus*; the ninth, from the *Baltick Sea*; the tenth, the eleventh, and the rest, from other places. Which denominations, although not necessary for the construction of a *Table*, yet they may be added unto our *Table* in those *Aræ*, where we have placed the number of the *Climates*: for so the *Climates* will stick closer in our memory, as also the Places in every Climate; and we may be able to make a better comparison between the difference of Cold and Heat. But this is better to leave to the Industry of the Reader, and to those that are Studious, than to add it to it, that so we may afford them a greater occasion of contemplating the *Terrestrial Globe*; and by this means may more easily commit them to Memory.

H h

You

The division of the Earth into *Climates*, by the Ancient *Geographers*.

Other *Climates* added by the Ancients.

Where the
Ancients be-
gan the Cli-
mates.

The first Cli-
mate of 9 de-
grees of Lat-
tude.

You must also take notice, that the Ancients did not begin the Numeration of the Climates from the *Æquator* it self, as our Table doth, but from the Place or Parallel, where the Longest day consisteth of 12½ hours; and therefore their first Climate is the second in our Table, their second our third, and so on: for they supposed those places, which we ascribe to the first Climate, could not possibly be inhabited by men, by reason of the excessive heat of the *Sun*, that therefore they judged it not meet to reckon those places; but seeing that Experience hath demonstrated the contrary, we would observe their Mode of naming and constituting of those Climates.

Ptolomy beginneth the first Climate from the Parallel, where the Longest day is 12½ hours; or where the Latitude or distance from the *Æquator*, is four degrees 15 minutes.

The matter is of no great concernment; yet it is better to begin from the *Æquator*, that all the places may lie in some Climate.

Proposition XV.

To shew the use of the Table of the Climates.

1. The *Latitude* of some place, or Elevation of the *Pole*, being given, to know the quantity of the Longest day in that place, and the Climate in which it lieth.

Let the given Elevation of the *Pole* be sought in the Table, and on the opposite Region we shall find both the quantity of the Longest day, as also the Climate and the Parallel. If that the given Elevation cannot be found in the Table, then take that Elevation which is less near, or the like, which is found in the Table.

2. The *Longitude* of the Longest day of any place being given, which any person hath observed, or received by relation, to know from thence the *Latitude* of that place, the *Parallel*, and the *Climate* in which that place lieth.

Enter the Table with the *Latitude* given, and you shall see on the opposite Region both the Latitude and the Place demanded; as also the Climate and Parallel.

3. A Climate being given, to determine the *Longitude* of the Longest day, and the Elevation of the *Pole*.

This is facill from the very sight of the Table.

From the Lon-
gitude of the
Longest day of
any place, to
know the La-
tude of the
place, and the
Parallel and
Climate.

CHAP.

CHAP. XXVI.

Of the Light, Heat, Cold, Rains, in the diverse parts of the Earth or Zones, and other properties of the Zones.

Proposition I.

These Causes are efficacious to generate and procure Light, Heat, Cold, and Rain, with other Meteors in the places of the Earth, and the vicine Air.

1. The more, or less, or no obliquity of the Rays of the Sun coming to, or emitted on any place. For the Rays falling perpendicular on any place cause great heat, and the other Rays sliding obliquely, have for that very reason a less power of heating, by how much the obliquity of them is the greater; that is, by how much the more they decline from the perpendicular Ray.

Of the causes
of Heat.

2. The diurnal stay of the Sun above the Horizon of the place. For the same heat maketh more hot, and changeth the Air in a longer time, than in a shorter.

3. The depression of the Sun beneath the Horizon, being more or less in the Night season. For this difference of depression causeth, that either more or less Light is perceived in the Air; also more or less Heat, Rain, thick Clouds, Hitherto belongeth the Twilight.

4. The more or less Elevation of the Moon above the Horizon, the more or less depression of the same beneath the Horizon; the more or less Diurnal stay of the same above the Horizon. The Causes are the same with those alledged in the three foregoing Paragraphs.

5. The same may be said of fixed Stars, especially of those more noted ones, and of the five other Planets, Saturn, Jupiter, Mars, Venus and Mercury. For they generate some light and heat in the Air, although it be but little, and change the Air divers ways, and raise Vapours, if that we may credit *Astrologers*.

The Planets
and fixed
Stars, raise Va-
pours, &c. in
the Air.

6. The propriety or Species of the Earth of every place. For where the Earth is more stony and rocky, there for the most part it is more Cold, than where it is sulphureous and fat; and here again it is more fertile. Where there is much Sand, and no Rivers, there is greater Heat.

7. Lakes, or the Sea adjacent. From thence also Fumes and Mists are raised more moist and frequent in the Air; and the Rays are less powerfully reflected from the Sea, than from the Earth.

Fumes and
Mists proceed
from Lakes.

8. The situation of Places. For the Sun acteth otherwise on Mountains and Mountainous places, than on Valleys and Plains. Moreover Mountains hinder the free access of the Rays of the Sun to the subject places; for to them the Vapours of the Air are in some sort attracted; whence the Mountains change the seasons of the adjacent places, as Heat, Rain, and the like. For these would be otherwise in the Subject places, if that the Mountains were absent.

See Chap. 20

9. The Winds especially, the general. So the *Etesian* winds temperate and allay the *Canicular* heat. A general Wind in the *Torrid Zone*, especially the *Subsolan* winds in *Brasilia*, render the Heat temperate; when in *Africa*, which is Occidental, the Heat is vehement, because these places feel not so general a Wind. The *Northern* winds are cold and dry; the *Southern*, warm and moist in our places.

The Winds
cause differ-
ence in the
weather.

10. Clouds, Rain and Fogs, take away and diminish light and heat. I suppose that there are not many causes of this variety in light and heat, &c. which is observed in divers places of the Earth, or also in the same places; but yet in a different time or season.

Proposition II.

How are the Seasons of the year, Spring, Summer, Autumn and Winter, to be defined?

The four Seasons of the Year.

According to Astronomers and Astrologers.

Although in Sciences we ought not to contend and dispute concerning Definitions; yet because certain *Homonymes* or Likenesses do here occur, without the Explication of which there will arise much confusion in the following Doctrine: therefore I will propose this Question, that you may the more cautiously avoid this *Homonyme*, that they may not be deceived and intangled by the same.

The Question comprehendeth two difficulties: first, *Whether these Seasons ought to be defined from the entrance of the Sun, and his stay in certain signs of the Ecliptick and Zodiack?* For so *Astronomers* and *Astrologers* commonly do, saying, that that is the *Spring*, whilst the Sun moveth from the first degree of *Aries* to the first of *Cancer*: that is *Summer*, whilst the Sun moveth from the first of *Cancer* to the first of *Libra*: that is *Autumn*, whilst the Sun moveth from the first of *Libra* to the first of *Capricorn*: and that is *Winter*, whilst the Sun moveth from the first of *Capricorn* to the first degree of *Aries*. Now it is manifest, that these Definitions are not general and agreeable to all places, because they are only of force in the Northern places (situated from the *Equator* towards the *Pole Arctick*), and not in the Southern: so that for these Definitions, the same persons bring Definitions contrary to the former; saying, that in these places, the *Spring* beginneth from the first degree of *Libra*, proceeding unto the first of *Capricorn*: the *Summer*, from the first of *Capricorn* to the first of *Aries*: the *Autumn*, from the first of *Aries* to the first of *Cancer*: and the *Winter*, from the first of *Cancer* to the first of *Libra*.

But from thence it would follow, that those Seasons cannot possibly be defined; which is false; and Generals ought to be defined by Generals. Secondly, Definitions so made, cannot have place in the places of the *Torrid Zone*; for when the Sun passeth through the *Vertex* of those places, then every one will then confess, that there ought to be *Summer*, except some other cause obstructed, in respect of the Celestial cause: and so in places situated in the *Equator*, the *Spring* or *Summer* ought not to be in the entrance of the Sun into the first degree of *Aries*, or *Libra*; but rather the *Summer*, because then he passeth through the *Vertex* of those places, and causeth great heat; except some other cause hinders. Neither can the *Summer* be transferred unto the first degree of *Cancer*, or *Capricorn*. The same also holdeth, concerning places situated between the *Equator* and the *Tropicks*; because the Sun passeth through their *Vertex*, before that he draweth near to the first degree of *Cancer*, or *Capricorn*, and therefore first causeth the *Summer* there. For we must know, that although Definitions may be free, yet seeing that by the common notions of all Nations, they define the *Summer* by Heat, and the *Winter* by Cold, or at least, by a lesser degree of Heat; and so the Definitions ought to be made, that they may render as little as may be from these Notions, and in no sort be contrary to them.

The same difficulty is, concerning the *Spring* and *Autumn* of the places of the *Torrid Zone*; yea, they do not seem to have place here, especially in places which lye in the *Equator*.

The

Of Heats and Cold.

The second difficulty, for which this Question is proposed, is this, *Whether the Seasons are to be defined from the very degree of heat and cold, viz. the Spring, Summer, Autumn and Winter; or from the access or recess of the Sun?* For the common notion of the Men of *Europe*, which they form concerning those Seasons, or in which they do conceive them, comprehendeth both, although they have more respect to heat than cold: But *Astronomers* are more attentive to the access and recess, or entrance of the Sun into certain Signs of the *Zodiack*, as we have said before. Moreover it is observed in many places of the *Torrid Zone*, that those Seasons answer not the access and recess of the Sun; but that contrary to the Celestial motion of the Sun, they are tried by a *Winter* (raging, not with cold, but with storms and rains,) when they should have *Summer*, by reason of the vicinity of the Sun; and on the contrary, they have *Summer* when the Sun is remote, when they should have *Winter*, (of which more anon,) and so those People define not the *Summer* and *Winter*, by the access of the Sun, and his entrance into certain Signs; but they define the *Summer* by its serenity, and the *Winter* by its rain and somewhat cold Air. And so it is impossible to make definitions of the *Spring*, *Summer*, *Autumn*, and *Winter*, as to be general and agreeable to all these places, according to the notions of the People.

These difficulties thus considered, I thus think; First, seeing that in many places of the *Torrid Zone*, (as we have spoken in the second difficulty,) and also some certain places of the *Temperate Zones*, Heat and Cold happen contrary to the Celestial mode or motion of the Sun; yet notwithstanding those definitions cannot be made accurately by Heat and Cold: therefore these terms of the Seasons must be distinguished, as being *Homonymical*, so that we must make some Seasons to be Celestial, and others Terrestrial. I confess these terms to be less fit, but the want of better doth compel me to use them: so that it is termed the *Terrestrial Summer* of any place, in which, in that place a great heat is caused every year by the Sun; but the *Celestial Summer* is termed that season of the year, wherein a great heat ought to be in that place, by reason of the vicinity of the Sun. So that is termed the *Celestial Winter* of a place, in which season Cold should be in that place, by reason of the great distance of the Sun; but that season is termed the *Terrestrial Winter* of any place, in which there is very great Cold in that place every year. And although in many places the *Celestial* and *Terrestrial Winter* happen in one season of the year, as also the *Celestial* and *Terrestrial Summer*; yet there are some places of the *Torrid Zone*, where they observe divers seasons of the year, as we shall shew in the following discourse. The same should be said of the *Celestial* and *Terrestrial Spring*, and likewise of the *Autumn*.

Secondly, Seeing that there are few places, where the *Terrestrial Summer* and *Winter* differ from the *Celestial* in the season of the year; but in most places fall in with the same time of the year: therefore the *Celestial Summer* may be absolutely termed the *Summer*; so also the *Winter*, the *Spring*, and the *Autumn*. But when we speak of the *Terrestrial*, we must add the word *Terrestrial*; but where we simply say, the *Summer*, the *Winter*, *Spring* and *Autumn*, we are to understand the *Celestial* seasons agreeing with the *Terrestrial*.

But how shall we make distinct and accurate definitions of the *Summer* (viz. the *Celestial*) the *Winter*, the *Spring*, and the *Autumn*, so that they may be general for all places, and also take place in the *Torrid Zone*?

I know no other Mode, whereby such definitions may be made, but only this:

1. The *Celestial Summer* of any place, is that season of the year, whose beginning is that day in the *Meridies* of which, the Sun hath the least distance from the *Vertex* of the place, (and that in the first season, if the Sun become vertical to that place in two seasons.) The end that day, in whose *Meridies* the Sun receiveth a moderate distance from the first *Vertex* of that place, or whether it be lesser than that of all other days of the year.

2; That

The definitions of the four Seasons of the year.

2. That is termed the *Winter* of any place, the beginning of which is that day, in whose *Meridies* the Sun obtaineth the greatest distance from the *Vertex* of that place. And the end that day, in whose *Meridies* the Sun acquireth a moderate distance from the *Vertex* of that place.

3. That season is termed the *Spring* of any place, which falleth between the end of the *Winter*, and the beginning of the *Summer*: or whose beginning is that day, in the *Meridies*, of which the Sun hath acquired a moderate distance from the *Vertex*, when he hath come from a great distance. And the end is that day, where in whose *Meridies* the Sun hath acquired a very small distance from the first *Vertex* of the place.

4. The *Autumn* of any place is termed that season of the year, falling between the end of *Summer* and the beginning of *Winter*; or whose beginning is that day, in the *Meridies* of which the Sun receiveth a mean distance from the *Vertex* of the place coming from a lesser. And the end that day, in the *Meridies* of which the Sun hath obtained a very great distance from the *Vertex* of the place.

According to these Definitions, *Spring*, *Summer*, *Autumn* and *Winter*, may be attributed to all places of the Earth. Neither is it easie to find out any other Mode of defining them, so that they may agree with all places. Now these Definitions being laid down, let us come to the matter it self.

Proposition III.

The Celestial Summer of the places of the Earth, which lye between the Tropick of Cancer and the Pole Artick, beginneth with the entrance of the Sun into the first degree of Cancer (viz. the 21 of June) and ends with the entrance of the Sun into the first degree of Libra (viz. the 21 of September), and that together at once in all those places. So that Autumn is in those places, the Sun going from the first of Libra unto the first of Capricorn: the Winter, whilst the Sun moveth from the first of Capricorn to the first of Aries; the Spring, whilst the Sun moveth from the first degree of Aries unto the first of Cancer.

The truth of this Proposition is easily shewed by the antecedent Definitions, and may be demonstrated on the Globe, and in Universal Maps: For the Sun coming to the first degree of *Cancer*, hath the least distance in the *Meridies* from the *Vertexes* of every one of the places of the *Northern, Temperate*, and *Frigid Zone*. After the same Mode, the Sun in the first degree of *Libra* hath a moderate distance from those *Vertexes*: In the first of *Capricorn* a greater: In the first of *Aries* a moderate, and he ascendeth to a more great, which is apparent, both from the declination of the Sun, and from the Globes and Maps. Therefore it is inferred, by the Definitions laid down before that the *Summer*, the *Winter*, and the *Spring* of those places, begin and end in those days we have spoken of.

The *Summer* of those places of the Earth, which lye between the Tropick of *Capricorn* and the *Antartick Pole*; or those of the Southern Zone, *temperate* and *frigid*, beginneth with the entrance of the Sun into the first of *Capricorn* (viz. 21 of December,) and ends with the entrance of the Sun into the first of *Aries*, (viz. the 21 of March.) The *Autumn* of those places beginneth with the entrance of the Sun into the first of *Aries*, and ends with the entrance of the Sun into the first of *Cancer* (viz. the 21 of June.) With this the *Winter* of those places beginneth, which endeth with the entrance of the Sun into the first of *Libra* (viz. 21 of September.) And with this their *Spring* beginneth, and endeth with the entrance of the Sun into the first of *Capricorn* (viz. 21 of December,) where the *Summer* beginneth again.

These

These are shewed after the same Mode, by the Definitions delivered, and by the Globe or Maps, by which we shewed the former, because in the first degree of *Capricorn* the Sun hath the least distance from the *Vertexes* of those places: In the first of *Aries*, a moderate, and descends to the less: In the first of *Cancer*, the greatest: In the first of *Libra*, a moderate, and ascendeth to a greater.

But the *Celestial Summer*, *Spring*, *Autumn*, and *Winter* of the places of the Earth, which lie in the *Torrid Zone*, between the Tropick of *Cancer* and *Capricorn*, do not begin on one and the same day of the year, but on divers days in every place of diverse Parallels, or of a diverse Latitude of this *Zone*. Now the places of the *Torrid Zone* are threefold, viz. the places of the *Aequator*; the Northern places of the *Torrid Zone*; and the Southern places of the *Torrid Zone*.

1. The Places lying in the *Aequator* have this peculiar to them, that they enjoy two Summers, two Winters, two Spring seasons, and two Autumns, and that in every Year: so that in half a year they have, or ought to have those four Seasons, according to our Definitions, and the Celestial Law. They have again the same four Seasons, from the 21 of September to the 21 of March, viz. one *Summer*, whilst the Sun moveth from the first degree of *Aries* to the second of *Taurus*, (from the 21 of March to the 22 of April.)

Autumn, whilst the Sun moveth from the second degree of *Taurus* to the first of *Cancer*, (from the 22 of April to the 21 of June.)

Winter, whilst the Sun moveth from the first degree of *Cancer* to the second of *Leo*, (from the 21 of June to the 19 of August.)

The *Spring*, whilst the Sun moveth from the 28th degree of *Leo* to the first of *Libra*, (from the 19th of August to the 21 of September.)

The other *Summer*, whilst the Sun moveth from the first degree of *Libra* to the second of *Scorpio*, (from the 21 of September to the 22 of October.)

The other *Autumn*, whilst the Sun moveth from the second degree of *Scorpio* to the first of *Capricorn*, (from the 22 of October to the 21 of December.)

The other *Winter*, whilst the Sun moveth from the first degree of *Capricorn* to the 28th of *Aquarius*, (from the 21 of December to the 19 of February.)

The other *Spring* is, whilst the Sun doth move from the 28th degree of *Aquarius* to the first of *Aries*, (from the 19th of February to the 21 of March.)

All these are easily demonstrated from the Definitions laid down, because that the Sun in the first degree of *Aries*, and in the first of *Libra*, hath the less distance in the *Meridies*, from the *Vertexes* of the places lying under the *Aequator*; for it hath none, because it is vertical unto them: therefore then do the *Summers* begin. Then in the second degree of *Taurus* and the second of *Scorpio*, (where the declination of the Sun is 11 degrees 45 minutes,) it acquireth a mean distance, departing to a greater: then therefore the *Autumns* do begin. Moreover, when he is in the first degree of *Cancer* and the first of *Capricorn*, he hath a greater distance from the places of the *Aequator*: therefore then do the *Winters* begin. Finally, on the 28th degree of *Leo*, and the 28th of *Aquarius*, he receiveth a moderate distance from the places of the *Aequator* (10 degrees 45 minutes,) ascending towards the least: and therefore then doth the *Spring seasons* begin. These are understood more perspicuously from the Globe; therefore here these Seasons may be distinguished thus, according to the Celestial Laws, notwithstanding the Terrestrial Seasons are in many places of the *Aequator* otherwise observed, as we shall shew in the following Propositions.

2. All the Places of the Earth, lying under the *Torrid Northern Zone*, have the end of the *Autumn* and the beginning of the *Winter* together, both at one time, viz. the 21 of December; but they have not together the beginning and end of the *Summer* and *Spring*, as also the *Autumn*; but different places have them in several days.

For

Further, concerning the Seasons of the Year.

Half a year, is from the 21 of March to the 21 of September.

The motion of the Sun in the 12 Signs of the Zodiac.

Other Observations about the beginning of the Seasons.

For the end of the *Autumn*, and the beginning of the *Winter* in those places, is, when the *Sun* obtaineth the greatest distance that possibly he can from the *Vertex* of those places, as it is laid down in the Definitions. And it is true concerning all the places of the *Torrid Northern Zone*, that the *Sun* entering into the first degree of *Capricorn* acquireth the greatest distance in the *Meridies* from the *Vertex* of those places, because that in all the other days he is more near to those places. Therefore the *Sun* being entered into the first degree of *Capricorn*, the beginning of the *Winter* happeneth to all those places; and also the end of *Autumn*, which is the first part of this Proposition.

The other part is also easily proved; for if these places be of a diverse *Latitude*, then the *Sun* is not vertical in the *Meridies* to those places in the same days, but in diverse: for then is the beginning of the *Summer* of any place of this *Torrid Zone*, when the *Sun* by his ascent from the first of *Capricorn* cometh to that degree of the *Northern Ecliptick*, that he is vertical to that place. So that in divers days the beginning of *Summer* may be in those divers places; yet in all those places its beginning falleth between the 21 of *March*, and the 21 of *June*. The *Summer* shall also end in different days, and the *Autumn* begin, because the *Sun* in divers days cometh to his mean distance, (or to the points of the *Ecliptick*, which have a moderate distance from those places,) because these points are differently seated between the first of *Libra* and the first of *Capricorn*: notwithstanding this beginning falleth out between the 21 of *September* and the 21 of *December*. After the same Mode, in divers days the *Winter* shall have an end, and the *Spring* begin, because the points of the *Ecliptick* again of a moderate distance, are divers from the *Vertices* of those places. Now the *Sun* touching them causeth the beginning of the *Spring*, which yet happens in all between the 21 of *December* and the 21 of *March*.

3. All the places of the *Earth* situated in the *Torrid Southern Zone*, have also the end of the *Autumn*, and the beginning of the *Winter*, together at one time, viz. the 21 of *June*: but they have not the beginning and end of the *Spring*, as also the beginning of the *Autumn*, together; but divers places have it in different days; yet so, that the beginning of the *Summer* of all those places, doth fall between the 21 of *September*, and the 21 of *December*: The beginning of *Autumn*, and the end of *Summer*, between the 21 of *March* and the 21 of *June*: the beginning of the *Spring*, and the end of *Winter*, between the 21 of *June* and the 21 of *September*.

The parts of this Proposition are proved after the same manner as the former: For on the 21 of *June* the *Sun* is in the first degree of *Cancer*, and therefore hath the greatest distance that is possible from the places of the *Austrial Torrid Zone*. Then therefore all of them shall have the beginning of *Winter*; but the beginning of *Summer*, the *Spring*, and *Autumn*, shall happen on divers days, because the *Sun* in sundry points of the *Ecliptick* becometh vertical unto divers places, and acquireth also a moderate distance from those places, in many places.

4. Those Places of the *Earth* in the *Torrid Zone* have something peculiar, which lye between the *Aequator*, and the Eighth degree of *Latitude*, as well towards the North, as South: For the *Sun* by his proper Motion, or by his access or recess, make two *Summers* in them, two *Spring*s; but yet but one *Autumn*, and one *Winter*, and that by a confused kind of order, viz. this, the *Spring*, the *Summer*, the *Spring*; the *Summer* again, then *Autumn*, and then *Winter*.

The cause of this Paradox is, because the *Sun* receding from the *Vertices* of those places, which lye between the *Aequator* and the 8th degree of the *Boreal* or *Northern Latitude* (where it maketh the beginning of the first *Summer*,) and going forwards towards the beginning of *Cancer*, it acquireth here a moderate distance; when it returneth from the *Vertices* towards those *Vertices*, it shall not make *Autumn* after that first *Summer*, but another *Spring*, seeing that it made the first before it began the first *Summer*; where it obtaineth a mean distance between the first of *Capricorn*, and the first of *Aries*.

For

For Example, let us take a place which is four degrees from the *Aequator*; because therefore also the *Sun* in the tenth degree of *Aries* declineth, and is distant from the *Aequator* four degrees; therefore he being in the tenth of *Aries*, shall cause the beginning of *Summer* in that place. Moreover, the greatest distance, which this place can have in the *Meridies* is 27 degrees, 30 minutes, (viz. in the first degree of *Capricorn*, where his declination from the *Aequator* is 30 minutes, 23 degrees, to which let the *Northern distance* of the place from the *Aequator* 4 degrees be added) therefore seeing his meanest distance is 0 degrees, let 0 degrees be his middle distance 13 degrees, 45 minutes. Wherefore when the *Sun* shall be in the points of the *Ecliptick*, which are distant from the place taken, or the *Parallel* of the place, 13 degrees, 45 minutes. Then the *Sun* shall make either *Spring* or *Autumn* in that place; the *Spring*, if the *Sun* be moved from those points towards the *Vertex* of the place; but *Autumn*, if the *Sun* tend from that point to a remote distance. Now the points of the *Ecliptick*, which are distant from the place assumed 13 degrees, 45 minutes, are found to be four, to wit, the 25th degree of *Libra*; the 3d degree of *Gemini*; the 27th of *Cancer*, and the 5th of *Pisces*, which is proved from the declination of these points. Because that therefore the *Sun* coming to the fifth degree of *Pisces* from the first of *Capricorn*, acquireth here a middle distance from the *Vertex* of the place assumed, and tendeth towards the place he shall then make, (viz. he being in the fifth degree of *Pisces*) the beginning of the *Spring* in that place; which *Spring* shall continue until the *Sun* doth come to the tenth of *Aries*, where he shall become *Vertical* to the place, and that shall be in the beginning of the *Summer*, when the *Sun* by his motion hath departed from the place, to the third of *Gemini*. Again, he shall have a moderate distance from the *Vertex* of the place in the *Meridies*, viz. 13 degrees, 45 minutes, and then shall that *Summer* have an end, and the *Spring* begin; not the *Autumn*, because that the *Sun* doth not tend to the greatest distance from the *Vertex*, from the third of *Gemini*; but returneth to the least, viz. whilst he moveth through *Cancer* and *Leo*, he cometh to the twentieth of *Virgo*: For then again he becometh *Vertical* to the place assumed, and makes the beginning of a new *Summer*, which continueth until the *Sun* cometh to the five and twentieth of *Libra*: For then again he obtaineth a middle distance, and tendeth to the point of the greatest distance (viz. the first of *Capricorn*) therefore then he shall make the beginning of *Autumn*: and in the first of *Capricorn* the beginning of *Winter*. So then we have shewed how such a place, which lieth between the *Aequator* and the eighth degree of *Northern Latitude* in the *Torrid Zone* may have two *Summers*, two *Spring*s, one *Autumn*, and one *Winter*, which by the same Mode may be shewn concerning the places lying between eight degrees of *Latitude* from the other side of the *Aequator*.

But in places scituate eight degrees beyond towards the *Tropicks*, this holdeth not, because those points of the first degree of *Cancer*, or the first of *Capricorn*, have not a middle distance from them, but lesser than a middle: For the greatest distance of the *Sun* from the place of the ninth degree of *Latitude* (that is possible) is 32 degrees, 30 minutes. Therefore the middle is 16 degrees, 45 minutes; and therefore if the place be in the ninth degree of *Northern Latitude*, the *Sun* being in the first of *Cancer*, shall have a less distance from it than the middle distance is; for that is only 14 degrees, 30 minutes, but this is 16 degrees: Therefore in that place the *Summer*, which beginneth with the first access of the *Sun* to the *Vertex* (in the four and twentieth of *Aries*, the fifteenth of *April*) is not finished before the *Tropick* of *Cancer*, but shall be continued in the whole course of the *Sun* through *Taurus*, *Gemini*, *Cancer*, *Leo*, *Virgo*, and *Libra*, in the four and twentieth degree of which, viz. about the fifteenth of *October*, it endeth.

The places in the *Torrid Zone* have something peculiar to them, which lye between the *Aequator* and the 8th degree of *Latitude*.

But here seem to arise two new difficulties:

1. That these *Months* must not be ascribed to *Summer*, because the *Sun* doth not recede by a direct course from the *Vertex*, but first he accedeth to another distance again and again, whilst he receedeth from the *Vertex* of the place to the *Tropick* of *Cancer*: but the *Summer* must be defined only by the time of his recess or departing back. But I answer to this, that the *Summer* ought to be defined by a departure, but not by a departure to every distance, but by a recess to a moderate or middle distance. Neither by this is a mixt access excluded from a recess, so that the recess be not greater than a middle distance.

2. For the places lying between the *Aequator* and the eighth degree of *Latitude*, seeing that before the first degree of *Cancer* (or if the *Latitude* be Southernly, before the first of *Capricorn*) the *Sun* acquireth a moderate distance from those places where we said the end of the first *Summer* is, it appeareth not that we should place the entrance of the *Spring*, because the *Sun* is not directly moved from that point again towards the place, but first it more departs, viz. from the first of *Cancer*, and from thence it returneth to the place. But we must know that the departure is so small, that we ought little to regard the same, because it scarce maketh one or another degree, and that time of a greater recess cannot be ascribed to another season, except we will feign some new fifth and sixth Season.

Also it may otherwise seem concerning these places to some one, viz. that an *intermedial Spring* should not be placed between two *Summers*, but one continued *Summer*; and that time of an *intermedial Spring* should be attributed to this *Summer*, making no account of it, that the *Sun* is removed to a middle distance from the place, seeing that he remaineth so near the place, and so little receedeth beyond his middle distance, that he can hardly diminish the heat of the *Air*, but by reason of his continuity rather augment at that time. I shall contest with none about this; but I think it more advantageous to insist on the explained Method; but here is overmuch concerning this Subject.

Proposition IV.

A place being given in the Torrid Zone, to find out the daies of the year, in which the Summer, Autumn, Spring, and the Winter, begin and end in that place.

The finding out of the days of the year in which the Seasons begin and end in places of the Torrid Zone.

1. If the place be situated in the *Aequator*, we have shewed in the preceding Theorem of the Proposition, in what degrees these Seasons of the year begin and end, which are there double.

2. If the place be without the *Aequator*, and removed from it beyond the eighth degree of *Latitude* or *Distance*, let it be brought to the *Meridian*, and let the imminent point of the *Meridian* be noted with *Chalk*; then let the *Globe* be turned round until some point of the *Ecliptick*, seated between the first degree of *Aries* and the first of *Cancer*, come to the same point of the *Meridian* (if the place given be in the Northern *Torrid Zone*; but if in the Southern *Torrid Zone*, then the point ought to pass between the first degree of *Libra* and the first of *Capricorn*) this shall be the point, which when the *Sun* entereth, he makes the beginning of the *Summer* in the proposed place. Then let the intercepted degrees between the noted point of the *Meridian*, and the *Tropick* of *Capricorn* (of *Cancer* if the place given be South) be cut into two equal parts, and let the middle point in the *Meridian* be noted, and let the *Globe* be moved until the point of the *Ecliptick*, seated between the first degree of *Capricorn* and the first of *Aries* (between the first degree of *Cancer* and the first of *Libra*, if the place be Southern) pass through the last noted point of the *Meridian*. Again, let it be moved until another point between the first degree of *Capricorn* and the first of *Libra* (the first of *Cancer*, and the first of

of *Aries*, if the place be Southern) pass through the same point of the *Meridian*: the first point will note the day for the entrance of the *Spring*, the latter for the beginning of *Autumn*. But the beginning of *Winter* is in the first of *Capricorn* if the place given be Northern, but in the first of *Cancer* if Southernly.

They may also be resolved by *Maps*, but most accurately from the *Tables* of *Declination*, viz. with the *Latitude* of the place enter the *Table* of the *Solar Declination*, in which seek that *Latitude*, to which you see the four days of the year apposed: from those take that which is between the 21 of *March* and the 21 of *June*, if the place given, or the *Latitude* of it given be Northern; but if it be Southern, take that day which happeneth between the 21 of *September* and the 21 of *December*, this day shall be the beginning of the *Summer*.

Then take away half of the given *Latitude* of the place from 11 degrees, 45 minutes, and seek the remaining Number in the *Table* of the *Declination*, you shall see again opposite four days of the year, in two of which the *Sun* shall obtain a middle distance from the place given; if therefore the place given be North, take two of those four days, whereof one happeneth between the 21 of *December* and the 21 of *March*, (this shall be the entrance of the *Spring*) the other between the 21 of *September* and the 21 of *December*, this shall be the entrance of *Autumn*: But if the place given be South, from those four days you must take the day between the 21 of *June* and the 21 of *September* for the entrance of the *Spring*; and for the beginning of *Autumn* that which happeneth between the 21 of *March* and the 21 of *June*. The beginning of *Winter* shall be the 21 of *June*, if the place be South; but if North, the 21 of *December*.

3. If the place given be between the *Aequator* and the eighth degree of *Latitude*, it shall have two *Summers* and two *Spring seasons*; besides *Autumn* and *Winter*, except peradventure we will cast away that second *Spring* which is intermedial between the two *Summers*, as we said in the end of the preceding Proposition, and attribute a continual *Summer* to that time; which if you do, we must act no otherwise with the given place than in the former Mode. If we will attribute two *Summers* and two *Spring*s to it, as the definitions of *Summer* and *Spring* accurately observed do require, we shall first act by the first Mode, as in the former Theorems, viz. we shall find the entrance of *Summer* and *Winter*, and except the four days of moderate distance found in the *Table* of those four, those two which we advised to take in the former Mode, for the entrance of the *Spring* and *Autumn*, here again we shall take on the same conditions; but of the other two days, that only which is proximate to the day of the *Summer* shall be taken.

For this will shew the end of the *Summer*, and the beginning of the second *Spring*; but for the day of the second *Summer*, another day of the three remaining shall be taken in that Area, from which the beginning of the first *Summer* was taken, viz. that which is distant by an equal number of days from the 21 of *June*, and (the 21 of *Capricorn* if the place be South) the first day of the *Summer*: So the days shall be found in which the *Summer*, the *Spring*, *Autumn*, and the *Winter* do begin and end in the places of the *Torrid Zone*.

Pro-
The finding out of the days of the year in which the Seasons begin and end in places of the Torrid Zone.

Proposition V.

In the places in the temperate and frigid Zones, the four seasons of the year are almost equal, or consist of an equal number of days: But in the places of the Torrid Zone they are unequal: Neither are only the times of the divers seasons unequal, but also the time of the season in the divers places of the Zones is unequal.

The seasons of the year in the places in the Temperate and Frigid Zone are equal.

1. For the places of the temperate and frigid Zones, what I have said is easily demonstrated: For seeing that the Sun in every time of those four quarters of the Year runs through three Signs, therefore the times of the Spring, Summer, Autumn, and the Winter shall be equal, or of equal days, except some days, viz. five in which the Summer, and four in which the Spring of the Northern places exceed the Autumn and the Winter: but in the Southern places it is otherwise, for Autumn and Winter exceed the Spring and Summer, which as we have shewed before, proceedeth from the excentricity of the Sun.

2. In places lying under the Equator, there are two Summers (as also other Seasons) but both short, as also both the Springs, viz. each Summer and each Spring hath only 32 days, which is 64 days; but the Autumns and Winters are longer, viz. 55 days, which is 110 days.

3. In the places of the Torrid Zone, by how much the less they are remote from the Equator, by so much the more they have the longer Summer, the less Winter, and more or less moderate Autumn and Spring: for in places not remote above 10 degrees from the Equator the Summer continueth six Months. Now the greatness of the Summer, Autumn, Winter, and Spring, is known by the preceding Proposition.

What hath hitherto been said, is only to be understood concerning the Celestial Seasons, that is, those which depend on a Celestial Cause, or from the accels or recess of the Sun: for from this alone cometh not light, heat, and cold, as we have said in some places before; therefore we shall consider the other causes in the following Propositions.

Proposition VI.

In places of the Torrid Zone, as the Sun by day is very near the Vertex, so on the contrary by night he is beneath the Horizon, and very much remote from the Vertex of those places, so that those places by night lie almost in the middle shadow of the Earth, neither can the Air possibly any wayes be warmed by the Suns rays by frequent reflection.

In places of the Frigid Zone, as the Sun by day is not very nigh the Vertex, so by night he doth not profoundly remain beneath the Horizon; but for the greatest part of the night doth so turn round beneath the Horizon, that many rayes from him by reflection do penetrate into the lower Air.

In places of the Temperate Zone, as the Sun by day cometh to the Vertex of those places by a moderate Vicinity, so by night by an easie distance he is depressed beneath the Horizon, so that some rayes at least are in the Air.

To shew this by the Globe, first let the Pole be elevated for some place situated in the Torrid Zone, or rather let the Pole be placed in the Horizon it self, that the places of the Equator may be in the Vertex of the Horizon, or that the wooden Horizon may become the Horizon of the places of the Equator; then consider the depression of the Parallels, which the Sun describeth by

Of the Motion of the Sun in places of the Torrid, Frigid, and Temperate Zones.

by his circumrotation, beneath the Horizon, and the truth of the member of this Proposition will appear.

Then let the Pole be elevated for the places of the Frigid Zone, or let the Poles be placed in the Vertex of the Horizon, and the Parallels of the Sun beneath the Horizon from the first degree of Libra to the first of Aries, being considered, it will again be manifest that they are very little depressed below the Horizon. And so we have shewed the second member or part of this Proposition.

Lastly, let the Pole be elevated for the Latitude of any place situated in the Temperate Zone, and the depression of the Parallels beneath the Horizon again being considered, the third part of this Proposition will be proved.

Proposition VII.

A place being given in the Globe, and the day of the year, to find the Longitude of the Crepusculum or Twilight in the place given at the day given.

That time is termed the Longitude of the Twilight, in which either before the rising of the Sun, or after his setting, some light is discovered in the Air.

For the finding out of the quantity of this time, we must suppose that which is observed by Astronomers (as we have said in the nineteenth Chapter) that the morning twilight beginneth for the most part, if the Air be serene, the Sun drawing nigh to the eighteenth degree of depression beneath the Horizon, and the evening endeth when the Sun hath come to that degree of depression.

Let therefore the Pole be elevated for the Latitude of the place given, and let the place of the Sun in the day of the year, be found from the day of the year, be fought in the Ecliptick of the Globe, and let his opposite point be noted; then let the Quadrant be applied to the Vertex, and the point noted be found to the Horizon; the Index to the twelfth hour of the Cycle; then let the Globe be turned round until the noted point be elevated 18 degrees above the Horizon, which is known by the help of the Quadrant; for so shall the place of the Sun be depressed so many degrees beneath the Horizon, and the Index in the Cycle shall shew how many hours, or parts of an hour, the serenity of the Air being laid down, the twilight continueth that day in the place given. It is convenient by three examples to learn the use of this Problem, choosing a place for one of the Torrid Zone, another of the Temperate, and a third of the Frigid Zone.

Proposition VIII.

In places of the Torrid Zone the twilights are small, very long in those of the Frigid, and moderate in those of the Temperate Zone.

For in places of the Equator, and those near, the Crepusculum, according to the Hypothesis laid down in the former Proposition, is of about one hour, which you experience testifieth is only half an hour, or little more. Because the more thick and gross Air is not so high there, as is required to make the twilight to the 18 degree of depression; both also because the Hypothesis of the 18 degree is to be taken concerning very small light, with which the twilight beginneth, such as yet is not accounted by the vulgar for a twilight.

In the Frigid Zone the twilight continueth for many days when the Sun remaineth beneath their Horizon.

In the Temperate Zone it continueth 3, 4, 5 and 6 hours, and in some places all night; and in the days of the Summer, according as the places are more or less high, the Frigid Zone. All these are proved by the Mode proposed in the preceding Proposition.

For the finding the Longitude of the Twilight by the Globe, of any place and day of the year.

Of the difference of the Twilights in the several Zones.

Proposition IX.

A place being given in the Temperate or Frigid Zone, and another in the Torrid Zone, and moreover the day of the year being given, to find out the hour of the place of the Torrid Zone, in which hour the Sun may have the Altitude above the Horizon of that place (and so strike that place with his rayes equally elevated) as great as it hath in the place of the Temperate Zone in the Meridies it self.

Let the Pole be elevated for the Latitude of the place of the Temperate or Frigid Zone, and let the place of the Sun found from the day given be brought to the Meridian, and the Altitude of it reckoned, for this is the Altitude of the rayes heating that place, and illustrating it in the Meridies.

Then let the Pole be elevated for the Latitude of the place given in the Torrid Zone; let the Quadrant be applied to the Vertex, and let the degree of Altitude before found out be noted in it; let the place of the Sun be brought to the Meridian, the Index to the twelfth hour of the Cycle, then let both the Globe and the Quadrant be moved till the place of the Sun agree with the noted degree of the Quadrant: for so the Sun shall have the same Altitude above the Horizon of this place, as it is in the Meridies of the former. The Index will shew the hour demanded in the Cycle; therefore this hour, and the rayes of the Sun illustrating and beating of the place and Air of the Torrid Zone, are as equally elevated over the Horizon of it, as the rayes in the Meridies of the former place; it thence followeth, that the same heat will be in the Torrid Zone at the hour found out, as in the place of the Temperate Zone in the Meridies, except other causes intercede, viz. first, that the Sun in the foregoing days hath introduced some one or other calid Constitution to the place, and the Air of the Torrid Zone; and not such, and so great in the places of the Temperate or Frigid Zone. Then secondly, that the Sun straitly ascending towards the Meridian above the Horizon of the places of the Torrid Zone, sendeth forth all his rayes to the place, as in one plain, and to one plaga, and therefore causeth greater heat than in the Temperate or Frigid Zone, where the Sun moveth obliquely from the Horizon to the Meridian, and sendeth forth his rayes from one and another plaga: therefore the rayes are not contracted into a place so narrow, nor do they continually beat.

For example, let us seek in what hour of the day in places being under the very Equator, on the day of the Equinoxials, the Sun will have that Altitude as he hath at Amstelodame on the Meridies of the same day.

Proposition X.

How the causes of light, heat, and of the seasons, which we have reckoned up in the first Proposition of this Chapter, have themselves in the Torrid Zone, and how to shew them.

First, every day of the year ascendeth directly above the Horizon of those places (especially of the Equator) towards the Meridian and the Vertex of them; and therefore about the ninth hour of Forenoon, he beginneth to ejaculate to those places rayes about 40 degrees declining from the perpendicular rayes, which rectitude of the rayes, or perpendicular of the rayes, augmenteth towards the Meridies, and again decreasing, continueth to the fourth hour after the Meridies or Noonstead, where the Sun departing towards the Occidental Horizon, beginneth to send forth his rayes more obliquely to those places; therefore the greatest heat in those places ought to be from about the ninth hour before Noon, even to the third or fourth after Noon, if that this cause be only regarded: but yet because the Sun now departs from the Vertex of those places, and sometimes approacheth nearer, therefore the

the Winter of every one of those places shall be, when the Sun goeth from the points of the Ecliptick much remote from those places; that is, from the first degree of Cancer or Capricorn, towards the points having a middle distance from the place assumed; the Spring, when he goeth from a point of moderate distance towards the very Vertex of the Pole, or to the point of the Ecliptick, which is Vertical to the place, or to the Parallel of the place; the Summer, where the Sun goeth from this other point of middle distance to a point of greatest distance; that is the first degree of Capricorn or Cancer.

2. In the places of the Equator it self, the Sun no day of the year remaineth above the Horizon more or less hours than twelve; and so many beneath the Horizon. In other places of the Torrid Zone one hour, or an hour and an half at the most (viz. in the extreame places of this Zone about the Tropicks of Cancer and Capricorn) when the day is at the longest, the Sun remaineth above the Horizon twelve hours, and in the shortest day about eleven hours, and in the intermedial days that time of the stay of the Sun above and beneath the Horizon doth not much differ from twelve hours. And therefore this is the cause that the nights are not without cold, and the heat of the day continueth not long about the evening tide.

3. In the night time the Sun is profoundly depressed beneath the Horizon, for that he illustrateth the Air with none of his rayes, nay not reflex. This is the cause that most dark nights are there, and the cold of the night is augmented, the Air is condensed, and contracteth it self, and being cold, it descends towards the earth by its own ponderosity. Moreover, in a very short time (about the space of half an hour) before the rising of the Sun, and after his setting, those places have the light and heat of the Twilight.

4. The Moon almost after the same manner as the Sun ascends directly from the Horizon towards the Meridian of those places, yet a little more obliquely, because it departeth from the Ecliptick, and therefore towards the Torrid Zone about five degrees; and it remaineth after the same manner as the Sun a little above twelve hours above the Horizon; and is depressed beneath it almost so many hours, and that profoundly, as we have spoken of the Sun. Therefore with her direct rayes, or those near to the perpendicular, she will augment the warmth of the night, especially when she is Vertical to any place, and diminish it by her recess: but by reason of her short stay above the Horizon, the effect of it is little discerned in any place, except when it is Vertical to it.

5. All the Stars arise, and set in places nigh the Equator (but those Stars which are near the Pole in places more remote from the Equator do not arise, and those are but very few) and therefore they can cause little heat and light; and that also insensible in the Air.

6. In many places of the Torrid Zone, as in India and its Isles, in the Tongue of Africa, and in Mexico the earth is Sulphureous, which sendeth forth more calid vapours, whence it communicateth a certain heat to the Air, and a peculiar property. In some places it is sandy, as in the North part of Africa, lying in the Torrid Zone, in part of Lybia, and the Land of the Negroes, in many places of Arabia, in Peru, and in the places between Peru and Brazilia: whence in these places a very great heat is raised by the Sun; because the particles of the Sand do very long retain the heat received from the Sun, and soon communicate the same to the vicine Air.

In other places the Rivers are many, and in those Sandy ones few; there are many in Abyssine, in Guiney, Congo, India, and in Brazilia; hence humid vapours are raised, which do very much blunt the force of the Suns rayes, and render his heat more tolerable.

Some hinder-
ances.

Of the seasons,
light, and
heat in the
Torrid Zone,
and how they
are shewed.

7. The most places of the *Torrid Zone* have the *Sea* adjacent; as *India* and its *Isles*, the *Tongue of Africa*, *Guiney*, *Brazilia*, *Peru*, *Mexico*; some places of the *Torrid Zone* are *Mediterranean*, as the more inward *Africa*, the *Regions* between *Peru* and *Brazilia*; whence it cometh to pass, that in those places the *heat* and *drought* is greater: and in some, or most of them, the *Air* is more moist, and less fervent then can be caused by the *Sun*, except other causes happen.

8. Most of the *Regions* of the *Torrid Zone*, seeing that they are almost encompassed by the *Sea*, have in the middle places more or lesser ridges of exceeding high *Mountains*, as *India* and its *Isles*, the *Tongue of Africa* and *Peru*. These rows of *Mountains* do very much vary the *light*, *heat*, and *rays* of those places: somewhere they hinder the *Oriental rays* of the *Sun*, other where the *Occidental*. Moreover, the humid *vapours* condensed in the *Air* are moved to the *Vertices* of these *Mountains*, as we have shewed in the twentieth Chapter, whence *rains* and *clouds* proceed, by which the *heat* and *light* of the *Sun* is very much obstructed, and the *Celestial cause* of the *Seasons* is disturbed. There are few of the places of the *Torrid Zone* which want those ridges, as the inward *Africa*, *Mexico*, and the like.

9. The effects of the *Winds* in the *Torrid Zone* are various and notable; for a general *wind* blowing from the side *Plagas* of the *East*, or from the *East* continually towards the *West*, refrigerateth the *Maritime places* which regard the *East*, as *Brazilia*, the *Oriental Coast* of *Africa*; but not so to those towards the *West*; as *Guiney*, *Congo*, *Angola*, and the *Coasts* of *Peru*. Some *winds* are appropriated, as the South in *Peru*; which *winds* dispel *vapours* towards the *Plaga* in which they blow. Some are fixed *winds*, of which we have largely treated in the one and twentieth Chapter. Now these *winds* do very much disturb the *Celestial cause* of the *Seasons*, for they are almost as equally constant, and observe order, as the *motions* of the *Heaven* it self. They bring down the *Air*, compel the *vapours* towards the tops of the *Mountains*, and by other Modes alter the *Seasons*. Ten *Anniversary rains* are in many places of the *Torrid Zone*, and take away the *Celestial cause*, seeing that they are as equally constant as the *motion* of the *Sun* it self. For those err, who suppose that this our *Sublunary Orb* observeth all with inconstancy, and without order, and that the *Celestial* only have a constant *motion*.

Seeing that the causes hitherto spoken of are so various, to be able to cause the *heat*, and the *properties* of the *Seasons*; and in one place some are from other causes; in another, others are of force, or concur in divers *Seasons* of the year, or mutually impede one another; hence we discover, why the cause and condition of the *Seasons* of the *Torrid Zone* is so various.

Proposition XI.

How the Spring, Summer, Autumn, and Winter (Terrestrial) do behave themselves, and in what Months of the year they commence in the divers places of the Torrid Zone.

We have said before, and especially in the second *Proposition*, that the *Seasons* in many places of the *Torrid Zone* are contrary to the *motion* of the *Sun*, viz. that it is *Summer* there when the *Sun* is most distant, and *Winter* when he is nearest, yea *vertical* to the *Vertex*. Therefore we have distinguished the *Seasons* into *Celestial* and *Terrestrial*. We have shewed heretofore, and that in the third and fourth *Proposition*, how any place being given in that *Torrid Zone*, the *Months* of the year are to be found, in which the place ought to have *Summer*, *Spring*, *Autumn*, and *Winter*, if we have regard to the access and recess of the *Sun*; that is, we have taught to design the times of the *Celestial Seasons*. But seeing that in many places of this *Zone* the fore-mentioned *Seasons* do not happen in those *Months*, but in others, and that in divers places in a different time; therefore the times of the *Terrestrial*

Terrestrial seasons must be taken, not from the *Heaven*, or a certain method, but from the experience made in those places, and as much as possible, the cause of every one of them, why they repugn the *Celestial cause*, must be explicated; viz. from those causes, which we have laid down in the first *Proposition*. This therefore ought first to be known, that the *Winter* in the *Torrid Zone* doth rage with cold and frost, but rather with rain; and is to be defined by a lesser heat, than that in the time of the *Summer*. Farther in many places of the *Torrid Zone*, they reckon not four but two seasons of the year, viz. *Summer* and *Winter*, and these are not distinguished by heat and cold, but chiefly by *ficcis* and *humidity*; for in the *Winter* they have often greater heat, than in their *Summer*, with a shortness of respiration, because the rain and the *Clouds* press the *Calid Air* downwards. But the *Spring* and *Autumn* are not to be found by so manifest signs, or differences.

We shall begin our *Narration* from that part of *Africa*, which lieth under the *Torrid Zone*, and proceeding towards the *East*, with *Brazilia*, we shall finish the whole *Torrid Zone*, seated in the *West* measured by us.

The *Regions* of the *Occidental* shore of *Africa* from the *Tropic* of *Cancer* to *Cape verd*, (that is distant in degrees from the *Equator* towards the *North*) are all abounding both with *Corn*, and variety of *Fruit*; there are also herds of *Cattell*, and flocks of *Sheep* in great abundance. The *Inhabitants* are of a great strength, the heat of the *Air* a little exceeding *Mediocrity*, so that the *Inhabitants* go naked, except the *Nobles*, and those that are rich, whose clothing is a *Linnen Cloth*. The cause of this fertility and temperate *Air* contrary to the custom of the *Torrid Zone*, is, First, many *Rivers*, of which the chief are *Senega*, and *Gambia*, before they discharge themselves into the neighbouring *Sea*, they water those *Regions*, and render the *Air* more humid and frigid. Secondly, the vicinity of the *Sea*, which affordeth humid *vapours*, and somewhat cold *Winds*. How the *Seasons* of the year have themselves in this place, and what months of the year *Summer* and *Winter* happen, and are vigorous, I have not found noted by *Writers*, which is to be imputed to their negligence, and sloth. Yet in one *Itinerary*, I have read, that in one of the *Islands* which lye not far from the *Promontory of Cape verd* (by name *Salina* or the *Hesperides*), in one of them, I say, called *St. Vincent* (the *Latitude* is 16 degrees) the *watery months*, that is *Winter*, are *August*, *September*, *November*, *December*, *January*, even to *February*. This time almost agreeth with the *Celestial cause*, for in the months of *May*, *June* and *July*, because the *Sun* is very near, or else vertical to that place; therefore it maketh the *Celestial Summer*, and here the *Terrestrial* agreeth with it, for then they have a greater heat, and dry *Air* without *Rain*. In the months of *February*, *March* and *April*, is their *Spring*, because the *Sun* is moved from a moderate distance to a lesser, therefore they are then without rains, and have a moderate heat. The months of *August*, *September*, and *October*, are to be ascribed to *Autumn*, by reason of the rains, although it ought to begin latter, because the *Sun* in *August*, hath not yet returned from his least distance to his mean. Lastly, the months *November*, *December* and *January*, are *Winter*, because the *Sun* hath then the greatest distance from their *Vertex*, and then they find more and longer continuing rains, with some cold; but this is not to be observed every year, though most years. But how the seasons are in the *Continent of Africa* is not related, except that concerning the shore of *Sierra Leon*, it is contrary; as we shall now speak.

2. Now succeed the *Regions* of the *Coast* of *Africa* which look towards the *South*, and extend themselves from the *Promontory* of *Cape Verd*, to the curvature or bending part of *Africa*, that is from the *West* to *East*. These *Regions* are counted by one name *Guiny*, although others attribute this term only to one part. Now they lie in the *Torrid Northern Zone* 3, 4, and more degrees from the *Aequator*. In these *Regions* there is a continual heat of the Air without any intervening Cold, yet they attribute some months to the *Summer*, and some to the *Winter*. I think the same must be understood of the former *Western Coast*, for in the *Regions* of the *Shore* called *Sierra Leon*, which is removed above 9 degrees from the *Aequator* towards the *North*, as also in many Tracts of *Guiny*, they ascribe the months *March*, *April*, *May*, *June*, and *July* to *Winter*, especially the three first, by reason that in these months there fall frequent and almost continual rains, hot or warm, great *Thunders* and *Lightnings*, and so great *Storms* rage without violent *Winds*, that none can easily conceive them, who hath not had experience of them. Now they rage I have already spoken, also in these months the *Fields* lie *Barren*. But when these *Stormy* months are expired, then they dig up the dry Earth (which hath sucked up the great *Rains* in the said wet months) and mix stamped and bruised *Coals* (instead of manuring) and so for the space of 10 days suffer the Earth to putrify, and then they sow their Seed. There is here so great an heat of the Air, joyned with humidity by reason of the proximity of the Sea, that the Fish which are taken, stink, if kept undressed half a day. Therefore in these places, the *Winter* shall be in *April*, *May*, and *June*, when the *Storms* and *Rains* rage. The *Spring* in *July*, *August*, and *September*; the *Summer* in *October*, *November*, and *December*; and the *Autumn* in *January*, *February*, and *March*, where the *Rains* and *Storms* do begin.

Now all these times of the Seasons in these places are contrary to the *Celestial* cause, or motion of the *Sun*, for in the months of *May*, *June* and *July*, great heat ought to be there, because then the *Sun* is then vertical, or near the *Vertex*, which the heat or warmth of the Rain also rectifyeth; contrariwise in the months of *October*, *November*, and *December*, it should be *Winter*, because that the *Sun* being about the beginning and *Tropick* of *Capricorn*, is most remote from the *Vertex* of those places. Here therefore the time of the *Terrestrial* seasons do much differ from the *Celestial* seasons. The cause therefore of those *Rains*, *Storms*, and *Thunders*, at that time in those places, when the *Sun* is so near, is not easy to be explicated. But it seems to be, that the *Sun* in the day time forceth up many *Vapours* from the *Sea*, and *Sulphurous* exhalations from the Land of *Guiny*, which vapours being condensed by the cool of the Night, cause the *Rains*; especially when no continual wind bloweth in those places, which may disperse the *Vapours*. But for the most part here is a calm, some *Storms* excepted. And these months of Rain which they attribute to *Winter* are not cold but hot, because no wind bloweth, and the *Sun* is *Vertical*, so the heat is *Suffocative*, which is the cause, of shortness of respiration to the Inhabitants.

And although the *Fields* be *Barren* of Grain in these *Watery* months, yet the *Trees* and *Bushes* are in their *Vendure* all the year, and bear Fruit.

The Day is here equal to the Night almost throughout the whole year, the *Sun* in the *East*, rising at six in the *Morning*, and sets in the *West* at six in the *Evening*; but the *Easterly* or *Westerly* *Sun* is seldom conspicuous there, because for the most part he riseth involved with *Clouds* for half an hour, and half an hour before he setteth, he is again involved with *Clouds*.

See Chap. 21.

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That also deserveth consideration, why in the Months of *July* and *August* the same *Rains* and *Storms* rage not there, seeing that the *Sun* is then as equally high to those places as in the months of *May* and *June*. Moreover why in the *Islands* of the *Hesperides*, which are not so far removed from *Sierra Leon*, and *Guiny*, the *Winter* falleth out in contrary months.

3. How the times of the seasons are in the *Interiour*, or *Mediterranean* part of *Africa*, which is included in the *Arch* of the *Tropick* of *Cancer*, the *Regions* of the *Occidental* *Shore*, and *Guiny*, or the Land of the *Negros*, concerning which I have found nothing as yet noted, but that all those places are almost *Steril*, except those adjacent to the River *Niger*: for that River every year in the months of *June*, *July* and *August*, overfloweth, and communicateth much fertility to those Lands; and moreover formeth many *Lakes*. The other places confining on *Lybia* are infested with violent heat, being for the most part *Sandy*. The *Watery* Months do not seem to bear sway here after the same mode, as in *Guiny*.

4. Now follow the *Regions* of the *Coast* of the *Tongue* of *Africa*, which is stretched from the *North* towards the *South*, and regardeth the *West*. The *Regions* are *Manicongo*, *Angola*, and the like, from the second degree of *Northern Latitude*, even to the *Tropick*, *South* of *Capricorn*, beyond the *Aequator*. Now the Kingdom of *Congo* beginneth from the second degree of *South Latitude*. The *Winter* in these places is like the constitution of the *Vernal* season in the Territory of *Rome* in *Italy*; the heat temperate, so that they alter their *Garments* in no time of the year. Neither are the tops of the adjacent *Mountains* infested with cold. Here almost with our *Spring*, the *Watery* *Winter* beginneth and continueth *April*, *May*, *June*, *July*, *August* and good part of *September*. At that time the *Summer* beginneth, which possesseth the other Months, even to the 10 of *March*; even in this *Summer* they have no rains, or at least very little, and seldom have a continual serenity. But in the *Watery* Months the *Sun* is scarce to be seen on any day, perpetual *Clouds* and rain so obstructing the Air, also frequent *Travados* or *Storms*. It doth not rain whole days, but for the most part two hours before, and two hours after noon, great drops fall, which are soon received by the droughty Earth. Therefore although the Inhabitants divide the year only into two parts, it may be distributed into four; (our common people also do usually divide the year into *Summer* and *Winter* because the *Spring* is comprised in the *Summer*, and the *Autumn* in the *Winter*.)

These times of the *Terrestrial* seasons in these places almost agree with the *Celestial* course, for from the 25 of *March*, *April*, *May*, *June*, *July*, *August*, to the 25 of *September*, the *Sun* departs from those places to the *Tropick* of *Cancer*, where he is most remote from them, the 21 of *June*, and the rest of the time he approacheth again to them: so that on the 30 of *September* he becometh vertical to them, and goeth to a moderate distance towards the *Tropick* of *Capricorn*, and returneth from thence in the months of *October*, *November*, *December*, *January*, and *February*; so that in *March* he again becometh vertical, therefore in those Months they have a *Summer* by reason of the vicinity of the *Sun*, whose effects are not here hindered by a *Terrestrial* cause. And then again in the Months from the 10th of *March*, to the 10th of *September*, they have *Winter*, because then the *Sun* is more removed from them: but the times of the *Spring*, *Autumn*, *Summer*, and *Winter* which we have assigned, do not well agree with the *Celestial* course, and I doubt whether the *Summer* and *Winter* may be distinguished into the *Spring* and *Autumn* in these places.

Therefore here a more easy cause may be readred, why in those Months from the 10 of *March*, to the 10 of *September* they should have a quotidian Rain, and some kind of *Winter*, viz. because the *Sun* departs from their vertex towards the place of the greatest distance: but this cause is not only sufficient, because it is

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The Wind is
the North-wind
Wind.

See the De-
scription of St.
Thomas.

The Mer-
chants at Aden
negotiate their
affairs in the
Night season
by reason of
heat in the
day.

not able of its self to produce such an effect, but another must be added: The tops of the Mountains, which lie not far from these Maritime places towards the east, are diffused in those watery Months to be continually covered with *Snow*, and this is caused by reason of the fixed wind which in these Months there bloweth; therefore the *Sun* elevateth the Vapours very much from the *Sea*. And this fixed Wind forceth them towards the tops of the Mountains where they are condensed, and then turn to Rain; and from the Rain which falleth from the Mountains springeth the inundation of the *Nile*, and other Rivers of *Africa*.

Moreover we must know that in these watery Months the Rivers of *Congo* overflow the adjacent Fields, which causeth great Fertility in them, and also disgorgeth great quantities of water into the *Sea*.

5. In the Maritime Region *Lowango*, adjacent to *Congo*, there are also observed to be Rainy Months, and other Months of *Summer* that are serene; but that which is to be admired is that they are not the same with those, in which we said the Rain doth wax vigorous in the Months of *January*, *February*, *March*, and *April*, when yet it is *Summer* and a serene Aire in *January* and *February* in *Congo*. Here therefore the Terrestrial Season is repugnant to the Celestial, because that in *January* and *February* the *Sun* is not most remote from those places, and therefore they should not have Rain, but rather *Siccity*. Without doubt the cause is either from another situation of the Mountains, another fixed Wind, or the like.

6. The *Island* of *St. Thomas*, and *Anobon* are very abundant in *Sugar*, *Grain*, *Fruits*, and *Meats*, and great plenty of *Oranges*, &c.

7. How the Seasons are in the other Regions of the *Occidental Coasts* of *Africa* from *Lowango* to the *Tropick* of *Capricorn*, I have not yet found to be observed by any one.

8. Therefore that shore being left, and the *Promontory* of *Good-hope* being sailed about, we return to the *Tropick* of *Capricorn*, where the *Oriental Coast* of the *Promontory* or *Tongue* of *Africa* is discovered, in which lyeth *Zofala*, *Mozambique*, *Quiloe*, even to the *Equator*, which are illustrated by the *Oriental Sun*. In these places the Winter is in the Months of *September*, *November*, *December* and *January*; in the rest *Siccity* and *Summer*, which time is contrary to that, in which in *Congo* we have said that they have the Rain in *Winter*, and yet these Regions lie from the *Equator*, but the ridge of Mountains which doubly divide this *Prominent Tongue* of *Africa* into the *Eastern* and *Western Land*, questionless are the cause of this diversity. The Land of these Regions are only of a moderate Fertility, in many places Sandy, Barren, and scorched with the chature of the *Sun*; but the Rivers, the adjacent *Sea*, and general *Easterly Wind* much allay the heat.

9. The other Regions of the *Oriental Coasts* of *Africa* lying from the *Equator* towards the North, at the mouth of the *Arabian Gulph*, and hence to the Shore of the said *Gulph*, even to the *Tropick* of *Cancer*; these Regions I say what seasons they have, and in what times of the year, I have not yet found observed by any; but that some write, that this tract is barren, sandy, oppressed with such a violent heat, and destitute of Rivers.

10. As to the seasons in the *Mediterranean* part of *Africa*, which is the Region of the *Abyssines*, which is cut almost in the middle by the *Equator*, so that it hath some Provinces in the Southern *Torrid Zone*, and very many in the Northern *Torrid Zone*.

11. Now leaving *Africa*, we enter the Regions of *Asia* lying under the *Torrid Zone*, where first we meet with the Regions of *Arabia* adjacent to the *Red Sea*, from *Meca* to *Aden* (12 degrees from the *Equator* towards the North) which regard the West; on the East they have the *Arabian Mountains*. These Regions are exceedingly infested with heat in *March* and *April*, and more in the following Months, whilst the *Sun* approacheth to their *Vertex*; and about it, it remaineth *May*, *June*, *July*, and *August*; the chature is so great, that the Inhabitants, especially the better sort, cause water to be poured on their Bodies all the day long, or elicie in Vessels of Water to refresh them. I suppose the cause

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to be the defect of watery Vapours, because on the *Oriental* part the Region is Rocky, and hath but few Rivers; now the *Oriental* wind, which is general, although it be not there perceived, repelleth the Vapours rising from the *Red Sea*. Likewise the abundance of Sand which retaineth the heat received in the night, and communicateth it to the Air. Therefore this time of the *Summer* and *Winter* agrees with the *Celestial Course*.

12. The same is the case of all *Arabia*, and its Eastern Coast.

13. In *Camboja* in *India*, lying under the *Tropick* of *Cancer*, as also in the Regions of *Malabar*, or the Eastern Coast of the *Indies* which regard the West, and extend themselves from the North towards the South to the eighth degree of North Latitude; I say these Regions the *Winter*, or rainy Seasons possess the Months of *June*, *July*, *August* and *September*, but especially from the middle of *June* to the middle of *September*. Neither in all these places doth it rain in an equal time, but more continually in the province of *Goana* and *Cocina*; and less in *Camboja* where it only raineth three Months, in the other eight months it seldom raineth in *Camboja*, but in *Goa* in the Months of *April* and *May* it raineth, but less vehement; and beginning with Thunder and Storms; so that to *Autumn* here, may be ascribed half the Month of *March*, also *April*, and *May* to the 15th of *June*, then from the 15th of *June*, *July* and *August* to *Winter*, likewise from the 15th of *September* to *December* the *Spring*; the other Months from the 15th of *December* to the 15th of *March* to *Summer*, for in these Months is great drought, because that the Water of the former Rains is extracted by the *Sun* from the Earth. Yet the Inhabitants do not number four Seasons, but only two, *Summer* and *Winter*, or rather a dry, and a rainy Season.

Besides these Rains, there are frequent Storms on the Coast, and also Thunder in those rainy Months; so that the *Sea* is supposed to be then shut up, and many Rivers then overflow; the *Sea* is open again in the Month of *September*, and then Ships put forth to *Sea* from the Coast of *Malabar* into various parts of the world. Neither are there any violent rains in these places in the Fields, except some Storms, by reason that it ceaseth for many hours of the day, therefore it affordeth the Inhabitants a time of Planting, and Sowing, which they do in these watery Months. The Air also is of a moderate heat at that time, because the *Sun* is obstructed with Clouds, so that the remote Inhabitants expatiate from the Shore to the Hills and Fields for recreation, where the inundation is not great, and incredible fertility is acquired to the Earth by this Rain. But if these Rains fall not on the year, (as in *Anno* 1630.) which seldom happens, then all hope of Sowing and consequently Harvest is taken away; thence cometh Scarcity of Corn, a hot Sultry Air, burning Feavours, Pestilences, and Deaths of Thousands of People. In the said year 1630, and the year following Mans Flesh was publicly sold in the Shambles in *Camboja*; Sometimes the Shores do so rage, that the Houses (which are but slightly built) fall by the inundation of the River.

They Sow in *May*, and the beginning of *June*, and Reap in *November* and *December*: it is otherwise in *Guiny*.

This *Summer*, and this *Winter* is contrary to the *Celestial* Course or Motion of the *Sun*, for in the Months of *July* and *August* the *Sun* is vertical to those places, or very near the *Vertex*, therefore they must have heat and drought; this is the great felicity of those places, for if these Rains fall not, and the Clouds obscured not the *Sun*, that great heat of the *Sun* would render the ground Sandy, and Steril, as *Lybia*, and *Arabia*, where these Rains are not, the *Sun* being near the *Vertex*. Contrarywise in the Months of *December*, *January* and *February*, they should have *Winter*, or lesser heat, because that then the *Sun* is most remote from them; and then they have *Summer*: Yet in the night the Air is cold enough: moreover a continual Wind from the 12th hour of the day to the 12th hour of the night bloweth from the *Sea*, which is very acceptable.

The winter is
not called
from the cold
(as with us)
but from the
Rains which
then fall.

A great Fa-
mine in Cam-
boja in 1630.

14. In

14. In the Coast of the *East Indies* which is called *Choromandel*, the seasons also differ from the *Heavens*; for in the Months of *March, April, May* and *June*, the *Sun* causeth vehement heat, and there is no rain. Now the People which for the most part are *Saracens*, divide the year into the *hot*, the *wet*, and the *Cold seasons*; the *hot* of *Summer*, as I have said, is in the months of *March, April, May*, and *June*, but the intollerable heat is from the middle of *May*, to the middle of *June*, the Wind blowing from the *North*, unto which if you turn your face, you shall discover so great a heat of the Air, as if you drew nigh an *Oven* for the *Sun* then in that *Plaga*, is in the *Meridies*: also the Wood and Stones contract a great heat, yet the Waters in the Wells is so cold, that many drinking thereof for extream heat dye.

The greatest heat of the day is between Nine in the Forenoon, and Three in the Afternoon; in these intermedial hours they rest from travelling: the other hours before Nine in the Morning, and Three in the Afternoon, the Air is at least tolerably temperate, serene, and acceptable, the Heaven delightful, and travelling pleasant.

The *Wet season* taketh up four months, *July, August, September*, and *October*.

The *Cold season*, *November, December, January*, and *February*: in *December*, and *January* the *Cold* is sensible enough, especially in the night.

Here are many things which deserve our enquiry, for in the months of *March, April, May* and *June*, the *Sun* cometh to those places of the Coast of *Choromandel*, and becometh *Vertical* to them; therefore it is no wonder if they have great heat; but why have they not the same heat in *July* and *August*, seeing he is equally as near them in those months, and by reason of the former heat it should be more hot? Moreover why do the seasons of the Coast of *Choromandel* differ from the seasons of the Coast of *Malabar*, seeing that they both lie in the same Climate, and have the *Sun* *Vertical* on the same days, and on the same remote? And that which is more to be wondered at, there intercedeth between these two Regions, in some places 70, in others only 20 miles interval; so that you may come into a place of a serene and servid Air, where the *Winter* predominateth, and that in the space of one day. *Maffeus* thus speaketh of these places, In these Regions saith he amongst other admirable things, that above others exceedeth the reach of all *Philosophers*, that in the same *Plaga* of the *Heavens*, in the equal access and recess of the *Sun* in the same months of the year, from the *Sun* rising beyond the *Mountain of Gatis*, (which by a direct excursion to the *Promontory* of *Cori* intersects the whole *Region* of *Malabar*) there is *Summer* and drought, and from the *West* on this side *Gatis* there are *Rains* and *Winter*; that in so near a propinquity of places, in respect of the course of the seasons, the same People almost seem *Antipodes* one to another. But not only in these, but also in others we have shewed this diversity to be found, and shall shew more anon. The cause is the situation of the *Mountains*, which determinate the Land of *Choromandel* from *Malabar*; proceeding from the *North* towards the *South*. To this must be added divers Winds, for on the Coast of *Choromandel* a general *Eastern Wind* is more discovered, (except in the *Summer months* of *May* and *June*,) which driveth the vapours towards the tops of the *Mountains*, whence it raineth in the Land of *Malabar*. These *Mountains* tops are discovered to be continually covered with *Clouds* in the *Pluvial months*, also more vehement Showrs in those, where the rain is in *Malabar*: But when it raineth in the *Region* of *Choromandel*, then is there a serenity in the tops of the *Mountains*, as in the Land of *Malabar* (except the months *July* and *August*,) for in these it raineth in both Lands.

15. In the *Regions* of the *Gangick Sea*, opposite to the Coast of *Choromandel*, and in the *Northern Torrid Zone*, as *Siam*, *Peru*, the *Chersonesus* of *Malacca*, the *Pluvial months*, in which the Rivers overflow, are *September, October* and *November*. But in the Land of *Malacca* it raineth every week of the year twice, or thrice, except the months of *January, February* and *March*, in which there is a continual drought. All these are contrary to the Cele-

Gele-

Celestial course, and their causes must be sought from the *Mountains*, *Winds*, the propinquity of the *Sea*, and the like: But because as yet we have no accurate observations concerning these *Regions*, we will not search them here. The chief cause of the *Fertility* of these *Regions*, is the overflowing of the *Rivers*. The vapours of the adjacent *Sea*, the *Rivers*, and the *Winds* do much allay the heat, whence the *Inhabitants* have great plenty of *Fruits*. In the *Kingdom* of *Patavia*, and those bordering on it, the *Summer* beginneth in *February*, and continueth to the end of *October*; in which time there is a continual heat, which is allayd with a continual *Oriental Wind*, the Air wholesome. In *November, December* and *January*, there are continual *Rains*, which yet do not hinder a new increase every month at the least. The same must be understood of *Camboja*. And this *Winter* agreeth with the *Celestial* course.

16. Leaving *Asia*, the *Pacifick Sea* being Sayled over, we enter that part of *America* which lieth under the *Torrid Zone*, which is twofold, *South* and *North*, the *South* again is twofold, *Peru* and *Brazilia*, although the parts of *Peru* be vicine, yet they have contrary seasons in one and the same time; for the *Region* of *Peru* is divided into three parts, the *Spout* of *Maritim* part, the *Mountainous* and the *Plain* part, which lie in the same Climate. In the *Mountainous* parts, they have a *Pluvial Winter* from the month of *October*, to the end of *March*, when they should have *Summer*. By the vicinity of the *Sun*, they have *Summer* from the entrance of *April* to *October*, in which months no *Rains* do fall; but in the *Winter months* there are continual *Rains*. Therefore the *Terrestrial seasons* differ here from the *Celestial*. In *Maritim Peru* there is almost no *Winter* in the whole year, but they account their *Winter* from the month of *April* to *October*; (which agreeth with the *Celestial* cause, because the *Sun* is then removed from them to the *Tropic of Cancer*, and thence returneth) by reason that in those months it raineth not, but almost every day the *Clouds* appear so thick as if it would immediately Rain, but there falleth only a certain kind of *Dew*, and that especially in the months of *June, July* and *August*: Yet this mist is not unwholsom, but being condensed into *Dew*, and falling, it irrigateth the *Vallies*. It doth not Rain at this time in the *Mountainous* places, but is a serene *Season*. This *Maritim Peru* is distinguished into *Vallies*, and *Sandy places*: the *Vallies* are abundantly fertile; the *Sandy places* which are between every *Valley* are sterile, also in the adjacent *Islands* it never raineth, but a *Dew* only falleth.

In the *Ile of Gorgon*, which is removed three degrees from the *Equator* towards the *South*, it raineth for Eight months almost continually, with so great *Thunder* and *Storms* not to be paralleld. In *May, June, July* and *August*, it is *Summer*, and dry, contrary to the *Celestial* course. In some parts of this *Torrid Zone* it is very cold, for in the *Province* of *Pascoa*, in the *Valley* *Apilima* both in *Summer* and *Winter* the season is very cold, so that the fruit increaseth not. In the *Region* of *Cusco*, which lieth almost in the middle between the *Tropic of Capricorn*, and the *Equator*, hard *Frosts* and *Shrubs* are also found. From whence it is collected, that *Peru* is parched with no violent heat, but rather enjoyeth a temperate Air throughout the whole year; excepting its *Sandy places* and *Hills*, but the *Vallies* are most fertile and pleasant, abounding with *Trees* and *Fruits*. Their Water they receive in the *Winter* from the *Dew* which I have said falleth every day; but in the *Summer* from the *Floods* which descend and rush from the *Mountains*, because in the *Mountainous Region* it is then *Winter*, and raineth. And from these *Torrents* the *Inhabitants* conduct the Water by certain conveyances into the *Vallies*; yet some *Vallies* are content only with the *Dew*, and yet produce abundance of Fruit.

The cause of this diversity between the seasons of the *Mountainous* and the plain *Peru*, and why it never raineth in the level *Peru*, is difficult to declare; for these *Mountainous* parts are so near to the level *Maritim Peru*, that any one in the morning descending from these *pluvial* and raining *showrs*, in the evening may arrive at the level *Peruvia* where there is no rain but a serene

rene

rene Air. The cause seemeth to be twofold. First, those tops of the Mountains. And Secondly, a South-West Wind which is proper and perpetual to Peru. Therefore this Wind forceth the Vapours towards the Mountains, where they are as it were condensed, so that the Clouds may not destil their drops in the level Peru; but in the Mountainous places they are attracted. After the mode which we have explained concerning Mountains.

Therefore Peru hath this in common with Egypt, and some other places, that the South Winds are not the cause of Rain and warmth, but rather a clearing the Air; although it may seem to have place in all the places lying towards the South from the Equator.

17. The South part of America, viz. Brazilia, is very pleasant, and excellent with an wholesome disposition of the Air; so that it giveth place unto no Region of the Earth. Concerning its seasons, the Inhabited front of it receiveth the Sukolan Wind, which refresheth Men and Beasts, and freeth them from the intolerable heat of the Vertical Sun; which if it approach the Sea, is discovered in the morning; if it departs from thence, it is discerned more after the Spring of the morning, neither doth it languish about the evening. It is wont do so in many parts of India; but it is so intense by the assistance of the Sun, that it is vigorous beyond midnight, and the Nocturnal Condensation of the Air cannot easily dul or overcome that dilation and natural motion of the Air.

But the other part (which is separated from Peru by high ridges of Mountains, and vast spaces) although it be infested with an unwholsome West Wind, and a Mediterranean Gale, at midnight, yet it is every where encompassed with Mountains near the Sea, and is so driven from the Maritime Gale that it can hardly penetrate to the shores.

As in these most delectable and constant seasons of the year, there are no great mutations, so they happen in the day and night seasons more evidently, because the days and nights are not more equal in space, than different in heat and cold: for the Sun ascending higher, after it hath opened the pores of the Earth and Men, it hideth it self more profoundly, and that by an equal interval, whence the greater condensation of the Air, effects the more extremoriforous part of the night. Hence a penetrating cold, from the third hour of the night, even to the rising of the Sun, striketh the body, so that that this is wont to be very noxious to those that are new comers into the Land; which he that thinneeth not, will hardly lead a good life in these, or other parts of the Indies. The Brazilians therefore very cautiously keep a continual fire in their habitations, and near their resting places: by the benefit of which they may be able to endure cold, and drive away venomous Insects.

Moreover the direct ascent and descent of the Sun, causeth the shortest Crepusculas, and maketh the nights so even to the days, that an hours difference can hardly be found.

The cold is more in the Summer nights than in the Winter, which is to be admired at; and it is more mildly discovered in the latter than in the former, the Air being tranquillous. The beginning of the Wet Season is in the month of March, or April, and is finished in August; in which the Sun returning from Cancer, in part dissolveth the matter of the Rain into winds, whence immediately proceed storms and tempests; which by and by the Spring Season calmly composeth. The Inhabitants of the Tropicks know no mutation about the seasons of the year; the Sun twice coming towards, and departing back, as many supposed; but only going away from the Equator to the Tropick of Cancer or Capricorn.

There are only two times of the year, whereof one is dry and hot, called Summer; the other hot and moist like to Summer with us in Europe, which supplyeth the place of Winter. And this is found most true in all the Indies, between both Tropicks. For although the beginning and end of the Winter and Summer seasons, by reason of the particular incidences of the place, and also for the greater or lesser vicinity of the Equator, do not happen in the same; yet for the most part the year is accomplished in about six months, inclining

See Pifo in his Book De medicina Brasilienf concerning the seasons.

clining to Humidity, and fix to Siccitye and on that account, as in the places of many Cities of Asia and Africa of the same Latitude with us, there is thence a great remission of the heat; but here is little perceived, although the Sun passeth the Zenith of the Brazilians in the months of October, and February, and striketh the Earth with reflex rays, at most acute Angles. Which diversity of these Regions, promisseth the Inhabitants perpetual health, by reason of the often calms, and the Air quelling all noxious heats.

Hence it is easy to collect, that the seasons of the year do not so much depend immediately on the Sun and his motion, as on the species of the Winds, the diversity of aspects of the Stars, the quality and peculiar situation of the Region.

Moreover in these Mediterranean Regions towards the West, the nights are more cold, than in the Maritime; so much some times, that the Frost seizeth on the very hairs of the People. In the same months from the East, about the Ocean is Summer and Siccitye; from the West beyond the ridges of the Mountains; and the Marshes of Brazilia, is the Winter, Fogs and Rain.

Oftentimes the Heavens may be seen covered with vast Clouds, from the East towards the West; but those again very thin, except in the days of the Rain, the Sun both rising and setting may be beheld with fixed eyes; for there is a wonderful serenity on every side, especially towards the evenings; which never abscondeth any Vapours or Clouds to the succeeding Moon, but renders the night so clear, that the old and new Moon may be seen in one and the same day; and letters may be well read at the quarter Moon.

The Aster in respect of the diversity of the Planets, other inferior causes according to the diversity of its temperature, for the Heaven about evening is bright with Lightning without Thunder in the most dry and serene season.

The drops of Rain are very great, and fall with great violence, which is wont to be preceded by a suffocative warmth.

The Dew here is more fruitful than that of Europe, being impregnated with much Winter, and therefore is more penetrating and thin, especially in Summer; which is manifest in all Metals, and in Iron especially, which it easily catcheth up without the assistance of any Clouds.

The Meadows and open Fields do less wax green in the Summer, but more especially in the Pluvial months, (although the Earth then seemed somewhat more sad to the Inhabitants) and the places unfit for Tillage afford Pasture.

All the Lands of Brazilia arise into moderate and pleasant Hills; there are no Mountains of any great height in the Coasts: but yet some are discovered afar off in the Solitudes, among the barren hills, yet not every where, but with some intervals of Miles the Valleys are interposed, every one irrigated with some small Rivers; and for that reason are not only fertile in the pluvial months, but also in those of the Summer. The Hills in the Summer months are sterile by reason of the heat of the Sun; so that they wither, and Grass doth not only die on them, but sometimes the Trees also. It very seldom raineth throughout the whole day and night; and for some continual days very seldom without intermission the Pluvial months do a little differ. In the year 1640 (as Mariners have observed) there were 7 Pluvial months, viz. February, March, April, May, June, July and August. But most, and almost continually from April, May and June. In the year 1642, the most Pluvial months six, viz. March, April, May, June, July and August. But the account of the other years was not much different. Now these observations are to be taken only for one place, and not for all the places in Brazilia.

Hence it is manifest that the Summer and Winter of Brazilia, answereth to the Celestial account, seeing that in the greatest distance of the Sun they have Rain; and in the least and moderate towards the South, they have heat: Yet there are not a few irregularities, the cause of which are to be sought from the situation of the Winds and Earth.

18. This is enough for the Southern America; in the Northern it is otherwise. For in the Province of Nicaragua it raineth for six months; and the other six months it is Summer, and dry weather; so that passengers may travel in the night. This now is contrary to the Celestial course, for in the wet months

No Islands are opposite to Brazilia.

See Pifo.

The six rainy months are May, June, July, August, September, and October.

months; for in *May*, *June*, and so on to *November*, the *Sun* is *vertical*, or near the *Vertex* unto these places: so that then they should have *Summer* and *Siccity* and not *Rain*. In *November* and *December* it is very distant, therefore they should there have *Rain*.

Thus have we declared the *Seasons* of the chief places of the whole *Torrid Zone*, from which being compared one with another we collect, 1. That in some places, the cold is scarce sensible in some part of the year; and therefore the *Winter* is rather to be defined by the *Rains*, than by cold in those places. 2. In some places the cold is sufficiently sensible. 3. In the night time, especially in the last quarter, the *Air* is discovered to be very cold, by reason of the depression of the *Sun* beneath the *Horizon*. 4. That it is not the least cause of the tolerable heat, and that those *Regions* are inhabited, *viz.* that no days are there long, but almost equal to the night; for if the days were as long there, the *Sun* remaining above the *Horizon*, as in the places of the *Temperate* and *Frigid Zones*; then doubtless they would be uninhabited. 5. That the *Winds* do much diminish the heat of the *Sun*. 6. That places which ly in one and the same *Climate*, have the *Summer* and *Winter* in divers times, although they be very near to one another. 7. That those places which have *Siccity* and *Humidity* contrary to the access and recess of the *Sun*, are so situated, that on the *East* they have *Ridges of Mountains*, and that they regard the *West*, *Peru* excepted. 8. That the *Seasons* observe no certain rule in the places of the *Torrid Zone*. 9. That although most of the *Inhabitants* divide the year into two *Seasons*, which is likewise observed by many *Writers*, to wit, a *Pluvial* and *Dry Season*, yet it may aptly be divided into four, so that they may not only have a *Summer* and a *Winter*, but also a *Spring* and an *Autumn*. For as in our parts the *Spring* approacheth near the nature of *Summer*, and the *Autumn* of *Winter*; so also the dry places of the *Torrid Zone* may be divided. 10. And lastly in some places there is a continual *Harvest*; in some only in two parts of the year, and in others only in one part of the year.

Proposition XII.

To shew how the four *Seasons* of the year are made, &c. in the places of the *Temperate Zones*.

1. In these places that cause, which we have placed in the first place amongst the causes of the *Seasons* in the first *Proposition* of this *Chapter*; is so potent in respect of the other causes, that that above almost maketh up, and moderateth them. To wit, in the *Regions* of the *Northern Temperate Zone* it is *Spring* and *Summer*; the *Sun* going from *Aries* by *Cancer* to *Libra*; because then he is more near them. Then the *Sun* going from *Libra* through *Capricorn* to *Aries*, it is *Autumn* and *Winter*. But in the *Southern Temperate Zone* the matter is contrary; neither can those other causes altogether disable the force of this first, and induce a new course of the seasons, and be able to alter the times, as in the *Torrid Zone*.

2. Yet those *Seasons* of divers places vary, so that in one place there may be more Heat or Cold, or *Rain* than in another, although the places lie in the same *Climate*; but yet they cause not the *Winter* to be changed into *Summer*, or *Summer* into *Winter*. A *Rocky*, *Marshy*, and *Maritim Land*, findeth somewhat another degree of heat or cold, than *Vallies*, or a *Chalk* and *Maritim Land*.

3. The places in the *Tropicks* for the most part in the *Summer* have an excessive heat, others a *Pluvial Season*; so that they almost approach to the nature of the places of the *Torrid Zone*. So in the part of the Kingdom of *Guzarat* lying without the *Tropick*; at the same time the wet and dry months are observed: which in the part lying beyond the *Aequator*, the *Summer* is changed into a *Pluvial Season*: yet then there is greater heat, than the dry part of the year, where they have a moderate cold; and in truth, in the places

ces of the *Temperate Zones* we judge the *Summer* and *Winter* not from the drought and rains, but from the heat and cold.

Now in the *Coasts of Persia* and *Ormus*, there is so great heat without *Rains* in the *Summer*; by reason of the vicinity of the *Sun*, that both the *Men* and their *Wives* ly in *Cisterns* full of *Water*. The like heat is in *Alexandria*.

Throughout all *Barbary*, the middle of *October* being past, *Showrs* and *Cold* begin to increase; and in *December* and *January* the cold is perceived more intense, and that only in the morning: and withal so remiss, that the *Fire* is not desired. *February* taketh away the greatest part of the cold from the *Winter*; but yet it is so inconstant, that sometimes 5 or 6 times in one day the *Air* changeth. In the month of *March*, the *North* and *West Winds* blow violently and cause whole trees to be yeeted with blossoms. *April* giveth form almost to all fruits; so that the entrance of *May* and the end of *April* is wont naturally to produce *Cherries*. In the middle of *May* they gather *Pigs*, and in the middle of *June* in some places are ripe *Grapes*; the *Pigs* of *Autumn* are gathered in *August*, and there is no greater plenty of *Figs* and *Pears* than in *September*. There is not so great intemperies of the year in those places, but that the three months of the *Spring* are always temperate. The entrance of the *Spring* (that is the *Terrestrial*, not the *Celestial*) is as they reckon on the 15th of *February*, and the end the 18th of *May*; in all which time the *Air* is most grateful to them. If from the 25th of *April* to the 5 of *May* they have no *Rain*, they esteem the same as ominous. They count their *Summer* even to the 16th of *August*, at which time they have a very hot and serene *Air*. Their *Autumn* from the 17 of *August* to the 16 of *November*, and they have that for two months; to wit *August* and *September*, yet not great. That which is included between the 15 of *August*, and the 15 of *September*, was wont to be termed by the *Antients* the *Furnace* of the whole year; and that because it produced *Figs*, *Pears*, and that kind of Fruit to maturity. From the 15 of *November* they reckoned their *Winter*, which they extend to the 14 of *February*. At the entrance of this they begin to till their Land, which is the plain, but the mountainous in the month of *October*. The *Africans* have a certain persuasion that the year hath 40 very hot days, and on the other side so many cold days; which they say begin from the 12 of *December*. They begin the *Aequinoxes* on the 16 of *March*, and on the 16 of *September*. Their *Solstices* on the 16 of *June*, and the 16 of *December*. The end of their *Autumn*, all their *Winter*, and a good part of their *Spring* is full of violent *Winds*, accompanied with *Hail*, *Lightnings*, and dreadful *Thunders*; neither is there wanting in many places of *Barbary* an abundance of *Snow*. In *Mount Atlas* 7 degrees distant from the *Tropick of Cancer*, they divide the year only into two parts; for from *October* even to *April*, they have a continual *Winter*; and from *April* again to *October* they have *Summer*. In this there is no day, in which the *Mountains* tops glitter with *Snow*.

In *Numidia*, the parts of the year swiftly pass away, for in *May* they reap their Corn, in *October* they gather their *Dates*; but from the middle of *September* to *January* a violent *Frost* continueth; *October* abstaining from *Rains*, all hopes of *Sowing* is taken from the *Husbandman*: the same hapneth if that *April* produceth not *Pluvial Water*. *Leo Africanus* remembreth many *Mountains of Snow* in *Africa*, not far from the *Tropick of Cancer*.

The North part of *China* although no more remote from the *Aequator* than *Italy*, yet it hath a cold more sharp; for great *Rivers* and *Lakes* are congealed up with *Frost*, the cause of which is not yet sufficiently known, except we should refer it to the *Snowy Mountains* of *Tartaria*, not far remote, to the avoyding of which cold, they abound with the *Skins of Foxes*, and *Seythilian Rats*.

New England, although it lie in 42 degrees of *North Latitude*, and therefore no more removed from the *Aequator* than *Italy*, yet in the month of *June*, when *Sir Francis Drake* was there, the *Air* was so vehement cold, that he was compelled to say back to the *South*; for the *Mountains* were

L 1 2

then

Of the seasons of the year in places lying in the Temperate Zones.

The Regions of Africa on the Mediterranean Sea are called the Coast of Barbary.

Of the seasons of the year of Barbary.

The Opinion of the Arabians.

The seasons of Numidia.

Of China.

New England.

The seasons of Egypt.

then covered with *snow*. The cause is the *Frigid* temperature of the *Earth* being *Stony*.

In *Egypt*, which is bounded with the *Tropicke of Cancer*, the *Spring* and *Temperate* Season of the year is observed about *January* and *February*. The *Summer* beginneth with *March* and *April*; and continueth *June*, *July* and *August*. The *Autumn* possesseth *September* and *October*. The *Winter* hath *November* and *December*. About the beginning of *April* they *Reap* their *Corn*, and presently thresh it. After the 20 of *May* not an *Ear* of *Corn* is to be seen in the *Fields*; no *Fruits* on the trees. On the *Ides of June*, the inundation of the *Nilus* beginneth.

The seasons in the freights of Magellan.

In the *Streights of Magellan*, and the adjacent *Regions*; although they be no more distant from the *Aequator* than our parts are, (under the same degree of *South Latitude*), yet they have no very hot *Summer*. So that the *Hollanders* in the month of *January* (when there should be an hot *Summer*) found a great glade of *Ice* in the *Creek* of one of their *Seas*. In the *Mountains* of the adjacent *Coasts* *Snow* is discovered all the *Summer* long; and it is observed, that in almost all the *Regions* of the *South Temperate Zone*, they have a *Cold* far more intense in *Winter*, and a violence of *Rain*, and a less heat in *Summer*, than the parts of our *Northern Temperate Zone*. Whether this be the cause, that the *Sun* makes a longer stay, and the slower progress in the *Semicircle* of the *Northern Zodiac*, than in the *Southern*; is to be questioned.

In the Neighbouring *Province of Peru*, which they call *La Valla Imperial*, in the *Province of Potosi*; they find so great a *Cold*, that for four miles circumference there groweth nothing.

The season of Chili.

In the *Kingdom of Chili*, which extendeth itself from 30 degrees of *South Latitude* to 50 degrees; the *Spring* beginneth in the months of *August* (sooner than the *Celestial Account* admitteth) and endeth in the middle of *November*. And from the middle of *November* *Summer* beginneth, even to the middle of *February*; from whence *Autumn* leadeth on to the middle of *May*, which the *Winter* succeedeth, which is very violent, and disposeth the *Trees* of their *Blossoms*, and scattereth a deep *Snow*; with a vehement *Frost*, which yet is discovered by the *Sun*, except (which is very seldom) that the *Sun* appeareth not, but the *Snow*, rarely alleth in the *Valleys*; for although it falls in great abundance, and is heaped up so high, that it ascends the tops of *Mountains*, and is heaped together in the vacuity of the *Mountains* as in so many wells, and endure almost the whole year; yet being there dissolved, they flow into the *Rivers* and *Torrents*, which run through the *Valleys* with a great force even to the *Sea*; to the great enrichment of the *Grounds*. But although here it *Snow* not, except rarely in the *Plains*; yet it maketh so excessive a *Frost* that the like is scarcely felt in many parts of *Europe*; which happeneth partly from the *Altitude* of the *Pole*; partly from the proximity of the *Mountains*; from which descend so subtle and penetrating *Winds*, that sometimes they are insufferable; whence it cometh to pass that the *Maritim* parts are more temperate.

He that is *Studious* may collect other differences of *Region* under the same *Climate*, or in the vicine *Climates* from *Writers*, for example; that in *England* the *Air* is not so cold as in *Holland*, so that they pen not up their *Hears* in the *Winter*. Between *Siberia* and *Tartaria*, in a place seated not far from the *Frigid Zone*, in the end of our *Temperate*, are said to be pleasant *Fields*, and rich *Pastures*, almost no cold, seeing that they scarce feel *Winter*; where by the command of the Duke of *Moscovia* the City *Toorn* is built, which is at this day so much increased, that it is able to repel the Assaults of the *Tartars*.

In

In *Japan* the *Winter* is *Cold*, *Snow*, *Rains* when yet other *Regions* of *Europe* and *Asia* lying under the same *Climate*, have far lessor *Winter*; the cause is because that *Japan* consists of many *Islands*, disjoyned by small *Europe*; and that it also lyeth in the middle of the *Ocean*.

In *Armenia* and the adjoining places, there is great heat in *Summer*, because it lieth among the *Mountains*; here and there mixed with *Fields*; and the more rich in some places in *Summer* remove to the tops of the *Mountains*, and remain there for some months; but the meaner sort in the day time defend themselves in the *Mountains* from the heat; and about eventide adder send to the lower ground.

Proposition XIII. To declare how in places in the Frigid Zone the four Seasons of the year have themselves with the light.

The cause of those Seasons, with the light proposed in the entrance of this Chapter, thus stands in the *Frigid Zone*.

The Center of the *Sun* for some days or months; (as the place is either nearer or remote from the *Pole*) doth not arise above the *Horizon*; and for so many days setteth not (as it would if it were not so) below the *Horizon*.

1. In those days when he is above the *Horizon*, the only illustration those places with his oblique rays, because he is not much elevated above the *Horizon*; but moveth round it, because those places are over much removed from the way of the *Sun*.

2. The *Sun* is not deeply depressed beneath the *Horizon*; yet in places near the *Polar Circle*, or *Arctic Pole*, although the Center of the *Sun* doth not arise, yet part of his Skirt ariseth and is beheld for some days above the *Horizon* before the Center itself ariseth; by reason that the half Skirt of the *Sun* is 15 minutes in the *Heaven*; for example, let us take those places whose distance is from the *Aequator* 67 degrees towards the *Pole Arctic*; let the *Pole* be elevated according to this *Latitude*; and in the *Meridian Circle* of the *Horizon*, you shall see that the degrees of the *Ecliptic* do not arise from the 19th degree of *Sagittarius* to the 1st of *Capricorn*; that is the Center of the *Sun* being in that *Arch* doth not arise for 24 days, viz: from the 10th of *December* to the 4th of *January*; and yet part of the Skirt of the *Sun* for that whole time shall be above the *Horizon*; to wit, on the 2d of *December* the *Limbus* glittereth the *Horizon*; but on the 10th of *December* is also on the first of *January* half the *Sun* shall be above the *Horizon*, and half beneath, because the Center is then in the *Horizon*. But the whole *Sun* shall be elevated above the *Horizon*, when the Center of the *Sun* shall hold the 12 degree of *Capricorn*; that is about the 4 day of *January*; also the whole shall afterwards appear, when his Center shall possess the 20 degree of *Sagittarius*; that is about the 7 of *December*.

But in places where the elevation of the *Pole* is 70 or 75 degrees, there this difference between the *Oriental Limbus*, and the *Oriental Center* is very little, so that the *Limbus* or Skirt scarcely anticipateth the rise of the Center of the *Sun* one day, or half a day.

From this smallest of depression it followeth also that they enjoy the light of the *Crepusculum* many hours before the rising, and after the setting of the *Sun*; and although the *Sun* ariseth not, yet in all, or many of the hours of the day they have light in the *Air*.

There is also another cause, which maketh the *Sun* first to be seen before that he is elevated above the *Horizon*.

For thence it cometh to pass that not only the *Sun* is seen before he is elevated above the *Horizon*; and before the *Rays* can directly come from him to the *Eye*, but also that the light of the *Twilight* sooner illustrateth the *Air*, than it would do without this refraction. We shall anon alledge an example of the appearance of the *Sun* proceeding from refraction.

4. The

The Island of Japan.

America very hot in the Summer.

Of the places in the Frigid Zone.

See Chap. 19.

The Planets
not always the
same above
Horizon.

4. The Full Moon, and near the Full, remaineth above the Horizon for many days; when the Sun is depressed beneath it, viz. for so many more days, by how much that place is more near the Pole. Yet it is not so highly elevated above the Horizon, as to cause any warmth; but the Full Moon in those months, in which the Sun remaineth above the Horizon in an whole revolution, the Full Moon is never above the Horizon.

5. The fixed Stars are almost the same always above the Horizon, but not the Planets. For Saturn remaineth 29 years above the Horizon of the place near the Pole, and 15 beneath the same: Jupiter 12 years beneath, and 6 above the same Horizon: Mars 1 year: Venus and Mercury about half a year. From this cause it is likely that there is great diversity of the motions of the Air and seasons in divers years.

6. The Land in most places of the Frigid Zone is Stony, Rocky, and as hard as Flint; in few places Chalky, Sulphureous and Fat: In these places there is a moderate fertility, in the other a sterility.

7. Those Regions are encompassed with the Sea, but for the Mediterranean we as yet have no certain account.

8. Some of the Regions of the Frigid Zone have Mountains of a moderate height, but most want them, running on a plain for a long space.

9. The cold Winds there frequently blow from the Polar Plaga, seldom the East Wind, and least of all the West. In the cold Arctick Plaga, the North Winds rage; in the Antarctic, the South.

10. Clouds and Rains frequently perplex these Regions.

From these causes it is not difficult to collect what the condition of the seasons in these Regions are; for in the Winter time when the Sun riseth not for whole daies, it cannot otherwise be, but that for the most part thick Clouds, Frost, and Cold must render the Land uninhabitable: They are not altogether deprived of light for that time; for the Moon being above the Horizon for a long time giveth light, and the twilight is daily afforded from the Sun to the Polar Horizon. But the Snow, the Clouds, and the Rain, are able to hinder both causes; for thick Clouds stick close about the Earth, which cannot be dissolved by the heat of the Sun; and therefore hinder the aspect of remote things. There is no fertility, but all barren and uncultivated; for that which some suppose, by how much any Region is nearer to the Pole, by so much less it feelth the intenseness of the cold, and the Fields are found more fertile, seemeth not probable to me; when neither in Nova Zembla (which is distant 16 degrees from the Pole) nor in Spitzbergen (which is only 8 degrees distant) such a constitution of the Earth is found: but a roughness and hardness, and almost in the middle of Summer, Snow or at least Showers and very cold Winds. Neither is their opinion helped by one example, observed by Mariners in a certain Region 19 degrees distant from the Pole, which most men suppose to be Greenland. For in this green Grass is found, and an Air more warm than in Nova Zembla, as is most certain. The only Animals peculiar to these Northern Regions, is the Rhinoceros; and this in the space of a month becometh exceeding fat, by feeding on this grass.

Rhinoceros a
kind of Veni-
son.

Nevertheless, seeing that as yet not many Regions are hitherto found of this temperature in the Frigid Zone, it is not expedient for us from this single example to make a general conjecture, especially seeing that the cause of this peculiar constitution is manifest for that Land is full of Marshes and Sedge, and the grass by which the Rhinoceros or Deer are rendered so fat, is not a kind of Terrestrial Grass, but Sedge and Ofers; but other Herbs are not there found, or any Trees. From whence we may gather, that that Land containeth some fat and Sulphureous Substance; which being mixed with the water produceth such an Oyle, and fattening Sedge; but that the like Earth is to be found in other parts of the Frigid Zone, hath not as yet been observed, but rather the contrary.

There-

Therefore in the Winter in these places is little light, but an incredible and great violence of Cold, Snow, Showers, and Polar Winds. And this Winter beginneth in the Northern Frigid Zone, when the Sun first entrencheth Capricorn; although also the Autumn, the Sun going from the 1 degree of Libra to the 1 of Capricorn, be little different from this violent Winter. The Spring indeed is less infested with this violence of the Air; yet it is without Snows, Showers, and cold Polar Winds. Yet the increase of heat in the day, or rather the decrease of cold, is discovered at that time, viz. the Sun going from the 1 degree of Aries to the 1 of Cancer. And in this Vernal season, or in the latter days of it, the Sun continueth above the Horizon in intire revolutions; and therefore then there is discovered a moderate heat, which yet is not of that force as to melt and dissolve the Snow of all those places into Water, much less is it able to melt the Ice; whence Marriners report, that here is to be found Snow and Ice of a perpetual duration: Then the Summer shall be, from the going of the Sun from the 1 degree of Cancer to the 1 of Libra; in the first part of which, the Sun yet remaineth for whole daies above the Horizon, and augmenteth the heat by some accession; so that June, July, and August, are months of a tolerable Air. In some places among the Mountains, the heat of the Sun is intense; but the Showers and Clouds do much hinder this benignity of the Sun, and especially the most sharp Northern Winds, unto which sometimes Snow is adjoynd; so that no fruits or Corn can here arrive to any maturity, except in some places near the Arctick Circle.

CHAP. XXVII.

Of the Shadows, which the bodies erected in the Earth, and illuminated by the Sun do cast; and of the division of the Earth arising from thence.

Seeing that the Shadows in divers places of the Earth, which the illuminated bodies of the Sun do cast, are carryed into divers places, and falling on the Sense, have much variety; hence it came to pass, that men who were ignorant of this cause, were struck with an admiration; and in respect of the Shadows of the Earth, divided the Inhabitants of the Earth, as it were into three sorts, (which division must be applied to the places of the Earth, or to its Superficies:) So that they termed some Amphiscij, others Heteroscij, and the rest Periscij. The explication of which terms, seeing that they contain but small learning; we shall say somewhat also concerning Shadows, which although they do not pertain to Geography; yet by reason of their near affinity, they may be proposed in this Chapter.

The Shadows receive their denominations from the parts or quarters of the World into which they are cast, as the Oriental Shadow, which tendeth into the East, from the Sun placed in the West. Contrariwise, the Occidental Shadow, which goeth into the Western Plaga or quarter. But here is chiefly to be considered the Meridian Shadow, which is situated on the Plain of the Meridian; or which is cast from bodies perpendicularly erected, or seated in the plain of the Meridian; the Sun then being in the Meridian, and this is two fold, viz. Northern and Southern.

The Inhabitants of that part of the Earth, are termed Heteroscij, where the Meridian Shadows of bodies erected, are constantly carried all days of the year to either Pole.

Of Shadows.

The

The *Periscij* are those Inhabitants of the *Earth*, where the *Shadows* of erect bodies in one and the same day, are carried about into all the *Plages* of the *Horizon*; or where the *Meridian Shadow* in one and the same day are cast to both the quarters of the *Meridian*.

The *Amphiscij* are those Inhabitants of the *Earth*, where the *Meridian Shadows* of the erect bodies in some days of the year, are cast to the *North*, and on other to the *South*.

Proposition I.

The *Shadows* of bodies erected above the *Horizontal plain*, fall upon the quarter opposite to it, in which the *Sun* existeth.

Of Shadows in reference to Opacity and Dissolving.

Those that are veried in the *Opicks* and *Horology*, are wont to say that a *Shadow*, an *Opac* and *Luminous* body, are in one *Plane*; but the *Term* or *Bound* of the *Shadow*, the *extremity* of the *Opac*, and the *Sun*, are in one *right line*.

For because the *Opac*, the *Shadow*, and *line* concealed from the *extremity* of the *Opac*, to the *extremity* of the *Shadow*, make a *Triangle*: now every *Triangle* is in one *plane*, therefore those three *lines* shall be in one *plane*: the *Sun* is in the *extremity* of the *line* conjoining the *extremity* of the *Opacity*, and the *Shadow*. Moreover an erect body is right to the *Horizontal plain*; wherefore the *plane* drawn through it, (*viz.* that of the forementioned *Triangle*) is also streight to that *Horizontal plain*, and therefore seated in the *Vertical plane*; and because a body erected is seated as it were a *Vertex* between the *Sun* and *Shadow*, therefore the *Sun* and *Shadow* shall be in the opposite quarter.

There are three parts of this *Shadow*, which the *Stile* erected, being illuminated from the *Sun*, doth cast, *viz.* a *Dense Shadow*, a *Central*, and a *Shadow* which is almost a *Dense Shadow*, which a ray coming from the uppermost edge of the *Sun*, doth terminate; a *Central shadow* is that which is intercepted between the ray of the *Superior edge*, and the *Central ray*: the *penumbra* is that which is intercepted between the *Central ray*, and the ray of the lower.

Proposition II.

The Inhabitants of the places of the *Earth* which ly in the *Tropick* of *Cancer* and *Capricorn* are *Heteroscij*.

The people in the Tropicks are Heteroscij.

For when the *Sun* is in the first *Degree* of *Cancer*; that very day the bodies erected in any point of the *Tropick* of *Cancer*, do absorbe the *Shadow* of the *Sun* possessing their *Meridian*, because that then the *Sun* perpendicularly from his *Vertex* hangeth over the *Horizon*; and therefore illuminateth all parts of it: neither doth any ray from the erect *Opac* hinder like this, which perpendicularly falleth on the *plane* of the *Horizon*; and therefore lyeth in the very *Opac*.

But in other days of the year, because the *Sun* declineth from the *Vertex* of the places of the *Tropick* towards the *South*; therefore the *Shadow* is cast in the *Meridies* towards the *North*, never towards the *South*. On the contrary in the places of the *Tropick* of *Capricorn*, every day it is cast towards the *South*, (except on one day, in which there will be no *Shadow*;) never towards the *North*.

Propo-

Proposition III.

The Inhabitants of the *Torrid Zone* are *Amphiscij*.

Let any place of the *Torrid Zone* be taken in the *Globe*, and let it be brought to the *Meridian*, and let the *Parallel* of the *Latitude*, which shall cut the *Ecliptick* in two points, be described by Chalk applied. When therefore the *Sun* shall be in these points of the *Ecliptick*, he shall describe by his circuvolution a *Parallel*, which shall directly hang over the *Parallel* described; and therefore on those two days, in which he obtaineth those points of the *Ecliptick*, in the assumed place, and in all situated in the described *Parallel*, he shall be vertical in the *Meridies*, and illustrate all the places of the *Horizon*. And therefore no *shadow* shall be cast on these two days; and the Inhabitants shall be *Amphiscij*, without any shadow; but on the other days of the year they shall not be so, but the *Meridian shadow* shall either be cast to the *North*, or to the *South*; to the *North*, whilst the *Sun* moveth in that part of the *Ecliptick*, which lie in those two points before noted towards the *South*. On the contrary, to the *South*, whilst the *Sun* moveth in that part of the *Ecliptick*, which is situated from those two points towards the *North*.

The Inhabitants of the Torrid Zone, are called Amphiscij.

Proposition IV.

The Inhabitants of the *Temperate Zone*, are *Heteroscij*.

For because the *Sun* in all those days of the year, in the *Meridies*, is moved from the places of the *North Temperate Zone* towards that quarter, to wit, the *South*; and on the contrary, from the places of the *South Temperate Zone*, towards the *North*; it followeth from the first *Proposition*, that the *Meridian shadow* of the places of the *North Temperate Zone*, bend to the same quarter all the days of the year, (*viz.* the *North*;) on the contrary, to the *South*, in the places of the *South Temperate Zone*.

The Inhabitants of the Temperate Zone, are called Heteroscij.

Proposition V.

The Inhabitants of the *Frigid Zones*, are *Periscij*.

For by reason, that on some days of the year the *Sun* setteth not in these places, but moveth round about the *Horizon*; it is also necessary that the *shadow* should be carried round into all quarters, and the *Sun* being in the superiour Semicircle of the *Meridian*, the *shadow* is cast towards the *North*; and when the *Sun* is in the inferiour Semicircle, the *shadow* is carried towards the *Southern quarter*.

The Inhabitants of the Frigid Zone, are called Periscij.

Proposition VI.

A place of the *Torrid Zone* being given, to find the days of the year, in which the Inhabitants of that place shall be without any shadow; and in what days the shadows are carried to the *North*, and in what to the *South*.

Let the days of the year, in which the *Sun* becometh vertical to the place given, be found; those shall be the days in which the Inhabitants of that place shall be without a shadow. For this, use the Mode in the third *Proposition*.

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Proposition VII.

The day of the year being given, to find the places of the Earth in the Globe, whose Inhabitants are Amphiscii that day.

Let the places be found, in which the Sun becometh vertical on the day of the year given, (according to the 9th Proposition in the 24th Chapter,) these shall be the places sought.

Proposition VIII.

A place of the Frigid Zone being given, to find the days of the year, in which the Inhabitants of it are Periscii.

Let the days of the year be found, in which the Sun setteth not in the given place, (according to the 10th Proposition of the 24th Chapter,) they are the days sought.

Proposition IX.

The day of the year being given, to find out the places of the Frigid Zone, the Inhabitants of which are Periscii that day, so that this day be the first day.

Let those places of the Frigid Zone be found, in which the Sun in the day given doth not first begin to set; they shall be the places sought for.

Proposition X.

In places situated in the Equator, the Meridian shadow falleth half the year towards the North, the other half towards the South, and in the days of the Equinoxes, the Inhabitants are Amphiscii.

For because the Sun in one half of the year recedeth from the Equator towards the South, the other half, towards the North; the shadows are carried to the quarter opposite to the quarter of the Sun, and thence it cometh to pass, that in one half year the Meridian shadows are carried to the North, and the other half to the South.

Proposition XI.

To place a Plain above the Horizontal Plain of our place, in which the erected Styles perpendicular may be the Amphiscii for some days of the year; on some days of the year the Meridian shadows may be carried to the North; on others, to the South; that is, in which the Meridian shadows may be so cast, as in some given place of the Torrid Zone.

Let the Latitude of the place given of the Torrid Zone be taken from the Latitude of our place, if the Latitudes be cognominal; but if they be of a diverse species, let both the Latitudes be added, and the remaining degrees kept; then in the Horizontal Plain the Meridian line being found, and also the line of the Equator, which is perpendicular to the Meridian line, let some Plain be erected above the line of the Equator, that it may incline above the Horizon so many degrees as were kept before. The Styles or Pins erected in this Plain shall cast such shadows, as if they were erected in the places of the Torrid Zone.

Pro-

Proposition XII.

In the places seated in the Equator, the shadow of the Style perpendicularly erected in the whole days of the Equinoxes, remaineth in one right Line, whether before Noon it be continually cast into one quarter of the West, or after Noon, into a quarter of the East; now in the other days of the year the shadow is carried round into the Semicircle.

In Places situated without the Equator in the Torrid Zone, whilst the Sun is moved in part of the Ecliptick, which lieth between the Vertex of any place, and the vicine Tropick, the shadow wandreth through the lesser part of the subject Superficies in a Semicircle. In the Places of the Temperate Zones, whilst the Sun is moved in a more remote Circle from those of the Zodiac, the shadows steal by the lesser Superficies in a Semicircle; and the greater, whilst the Sun runneth through the nearer Semicircle of the Zodiac. In the days of the Equinoxes, the shadow of an erected Style is carried round in a Semicircle in all the places of the Earth, except the Equator and the Pole.

These are all rendered perspicuous, partly from the sight of the Globe, and partly from the declination of the Diagrams.

Proposition XIII.

In the places of the Torrid Zone, whilst the Sun is in the Arch of the Ecliptick, between the vicine Tropick and the Parallels of the place, in those days the shadow of the erected Style twice returneth back, and goeth over the Lines left behind, viz. once before Noon, and once after Noon. The Sun also in these days will seem to infect his course.

Take any place of the Torrid Zone in the Globe, and let the Pole be elevated according to his Latitude, and let the Parallel of the place be described, which shall cut the Ecliptick in two points; I say, that whilst the Sun moveth in the intercepted Arch of the Ecliptick, between this Parallel and the vicine Tropick, in those days the Sun will seem to be twice retrograde, and go over the lines left behind. Let any of the Points of that Arch be taken, and let the Parallel of the Sun be described, viz. which the Sun being in that point describeth by Diurnal circumvolution: For Example, take the first degree of Cancer or Capricorn, and another of their Tropicks, for so there will be no need of the description of a Parallel, until it come to the point in which the Quadrant toucheth the Parallel; the Sun being in this Seat, or in this quarter, will seem to bend his course towards the Vertex of the place, and the shadow shall begin to be retrograde from the line of the Equator towards the Meridian line. After the same manner, if that you apply the Quadrant to the Occidental part of the Parallel, you shall see in that point in which the Quadrant toucheth the Parallel, that the Sun goeth to the quarters he hath left; and setteth in that quarter in which some hours before he was.

Corollary. Therefore it is not against Nature, that the shadow should go back on Sun-Dials; but then it is miraculous, if that it be done suddenly in a noted space; also if it repeateth the lineary hours, viz. if that the Style be not perpendicular, but parallel to the Mundane Axis: yea, although it be perpendicular, yet do not the lines of the shadow it self shew the hours; but the lines of the shadows of the Axis of the World, part of which is concealed in the mind on the Dial, if that it be wanting.

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Proposition XIV.

A place being given in the Torrid Zone; and one day of those in which the Sun seemeth to bend his course, and the shadow of the Style seemeth to go back; to find the quarter in which the Sun then shall be, and the hour when it shall be.

Let the Pole be elevated for the Latitude of the place given; and let the place of the Sun be found at the given day, and let it be noted in the Ecliptick, and let the Parallel be described with Chalk, which the Sun being in that point describeth. Let the Quadrant be applied to the Vertex, and so turned about until it touch the described Parallel: so the extremity of the Quadrant in the Horizon, shall shew the place sought for. Now that the hour may be found, let that point of the Parallel be noted in which the contact is made; let the Index be placed at the twelfth hour of the Cycle, and let the noted point of the Parallel be turned to the Meridian. The Index will shew how many hours before, and how many hours after Noon the regrefs beginneth.

Proposition XV.

The Longitude of the shadows decreaseth, the Altitude of the Sun increasing; and on the contrary, the Altitude of the Sun decreasing, the shadow increaseth.

They decrease from the East to the Meridies, and from the Meridies to the setting, the shadows again increase.

For the Sun is more near the vertex of the Style, by how much the he is elevated above the Horizon; therefore the ray of the Sun terminating the shadow, becometh also more nigh the style, and on that account the shadow becometh lesser. Moreover, the Sun hath the greatest Altitude in the Meridies; therefore the Longitude of the shadow then shall be lesser. But in the rising and setting of the Sun there is no Altitude; therefore the Longitude of the shadow shall be infinite.

Proposition XVI.

The Longitude of the Style, and the shadow being given, to find the Altitude of the Sun above the Horizon, and thence the hour of the day; if that moreover the Latitude of the place, and day of the year be known.

The Longitude of the Style, the shadow, and the ray terminating the shadow, makes a right Angled Triangle: therefore let the proportion be instituted according to the 15th Proposition of the second Chapter. As the Longitude of the shadow is to the Longitude of the style: so are the whole sines to the Tangent of the Angle, which sheweth the Altitude of the Sun.

From this Altitude and Latitude of the place, and day of the year, shall the hour of the day be found out.

Proposition XVII.

The Semidiameter of the Sun and Earth being given, and the distance of the Sun from the Earth, to find out the Longitude of the shadow, which the whole Earth casteth towards Heaven.

The shadow of the Earth is Conical, as the Opticks demonstrate, and is easily shewed by a Diagram: therefore the distance of the vertex of this Cone, which causeth the Eclipse of the Moon, from the Earth, is sought; that is found by this Proposition: for as the distance of the Semidiameters of the Sun

See Proposition 3, Chap. 29.

Of the Longitude of the shadow.

Sun and Earth are to the distance given, so is the Semidiameter of the Earth to the Longitude of the shadow of the Earth, or to the Axis of the shady Cone.

Proposition XVIII.

The distance of the Moon from the Earth, and the Longitude of the shadow of the Earth being given, to find how great a part of the Moon is obscured; how great the Eclipse will be, if that the Moon remain in the Ecliptick.

Let the Rule of Three be instituted according to this proportion: As the Longitude of the shadow is to the excess of this Longitude above the distance of the Moon: so the Semidiameter of the Earth is to that shady Cone of the Earth, in that part where the Moon entered it.

Furthermore; As the distance of the Moon is to the found out Semidiameter of the shadow: so are the whole sines of the Canon to the Tangent of the Angle of sight, which the half diameter of shadow subtendeth to our eye; which, if it be doubled, the Angle of sight is accounted for the whole diameter of the shadow. With this Angle; let the Angle of sight, or the apparent Semidiameter of the Moon, which is in opposition of the Sun, or in time of Eclipse, be compared.

From this Comparison the quantity of the obscurity will be made manifest, which if you desire to have in Digits, institute a Rule of Proportion after this manner: As the diameter of the Moon is to twelve Digits, so is the apparent diameter of the shadow, or Angle of sight, to the Ecliptick Digits.

Proposition XIX.

By how much the places of the Earth, every day are more remote from the Equator, or from the Parallel of the Sun; by so much the more, both the Meridian shadow, as well as the shadows of the rest of the hours, are longer.

For because the Sun is more remote from the Vertex of those places, therefore also the rays of the Sun terminating the shadow, are more remote from the Style; and therefore the shadow is so much the longer extended.

Proposition XX.

If that the Style be placed in any plain after such a Mode, that it becomes part of the Axis of the World, or that it be Parallel to that Axis, the shadow of that Style shall fall on a certain hour, on the very line of that Plain, in which this Line is cut by the great Horary Circle, whether of declination, or from the Meridian, in which the Sun is at that hour.

For the shadow of the Axis of the World, or the style so placed, falleth on the plain of the Horary or Meridian Circle, in which the Sun is at that moment of time; for neither can it fall beyond the Plain, seeing that the Sun, the Opac body, and the Shadow are in one Plain, upon which the Style is placed. Wherefore seeing this Style is upon this Plain, as also on the Plain of the Meridian, which the Sun keepeth for a moment; thence it followeth, that this shadow may fall on the common Section of this Plain, or the Plain of the Meridian, or of the Horary Circle: For if any Line be in two or more Plains, it shall be in the common Section of those Plains.

A moment, or small space of an hour.

Pro.

Proposition XXI.

To describe the Equinoctial Night-Dial.

Equinoctial
Night-Dial.

A Plain of Wood, Paper, Brass, or other Metall, must be erected above the *Horizon*, so many degrees as the *Aequator* is elevated above the *Horizon*; or so many degrees as are in the Complement of the *Latitude* of the place.

Before it be erected, it is necessary to draw the Lines of the *Scioterick*; therefore let what point you please be taken in that *Plain*, and let the *Periphery* of the Circle be described from it, as from a *Center*. Let a line Parallel to the *Horizon* be drawn through that *Center*; or let the Line be Parallel to the common Section of the *Aequator* and the *Horizon*, which shall be the Line of the shadow of the hour of six in the Evening, and six in the Morning. Let a Line perpendicular to this be drawn from the *Center*, which shall be the shadow of the twelfth hour: then let both the *Quadrants* be divided into three parts, and every one of those three, into two, so that the six Arches may be in every one of them, whereof every one shall be of fifteen degrees; and let them be drawn from the *Center* to the terms or bounds of the Arches of the right Line, these shall be the Lines of the shadows for the beginnings of the remaining hours, which fall between twelve and six, whose number and order must be set down at the extremities of the Lines drawn; the same Arches of fifteen degrees beneath the *Horizontal* line must be taken in the described *Periphery* for the hours before six in the Morning, and six in the Evening; and the Lines of the shadows must be drawn; the perpendicular *Style* must also be erected from the *Center*.

Furthermore, In the *Horizontal* plain (if that the Plain of the *Scioterick* be not yet erected) the *Meridian* line must be found, and the Line of the *Equinoctial* rising and setting; and so it must be placed on or above this Plain of the *Scioterick*, that the *Horizontal* line of the *Scioterick* may be parallel to this Line of the rising and setting: so the shadow of the *Style* shall shew the beginning of the hours at every day of the year.

But because the *Sun* only illustrateth this one *Superficies* of this *Plain* half a year, and the other another half year, therefore in both the *Superficies* a *Scioterick* must be made after the appointed Mode laid down before; that on one side of it, in the time of *Summer* and *Spring*; in the other, in the time of *Autumn*, the hours may be known by the benefit of the *Shadows*.

The Lines of the Circle, which shew the place of the *Sun* in the *Ecliptick*, or the entrance of the *Sun* into the twelve *Signs* of the *Zodiack*, and which do represent the *Parallels*, which the *Sun* describeth in the Heaven by his *circumvolution*, may easily be drawn on this *Equinoctial* *Scioterick*. For let a certain Magnitude of the *Style* be taken, and let it be accurately divided into Ten parts, and one of these Ten into ten other parts, that the whole Line may be conceived to be cut into an hundred particles: then from a Table of *Declinations*, let the *Declinations* of the *Sun* be excepted, the fifth, the tenth, the fifteenth, the twentieth, the twenty fifth, the thirtieth degrees of *Aries*; or the first, the fifth, the tenth, the fifteenth, the twentieth degrees of *Taurus*; the first, the fifth, the tenth, the fifteenth, the twentieth degrees of *Gemini*; the first degree of *Cancer*: and let the *Tangents* be taken from the *Mathematical Canon*.

Moreover, from the *Center* of the *Horologe* in the interval of the *Tangent* of Complement of the fifth degree of *Aries*, let the *Periphery* of the Circle be described; this will note the entrance of the *Sun* into the fifth degree of *Aries*, and the twenty fifth of *Virgo*, and the Parallel of the *Sun* for that day, viz. when the diurnal extremity of the shadow, by its *circumvolution*, shall fall on this described *Periphery*, it shall be a sign, that the *Sun* is in the fifth degree of *Aries*, or the twenty fifth of *Virgo*. After the same Mode, let the *Peripheries* be described in the interval of the Complement of the tenth and the

twentieth

twentieth degrees of *Aries*, the first and the fifteenth of *Taurus*, the first and the fifteenth of *Gemini*, and the first degree of *Cancer*; those will shew the *Parallels* of the *Sun* in those points, and also in the points of the 20th degree of *Virgo*, the 10th and the first of *Libra*; the 15th of *Leo* and the first of *Leo*; and the 15th degree of *Cancer*.

After the same Mode on the other side of the *Scioterick*, let the *Peripheries* be described for the *Parallels* of the *Sun* in the first degree of *Libra*, and the 25th of *Pisces*; in the 10th of *Libra*, and the 10th of *Pisces*; in the 15th of *Libra*, and the 15th of *Pisces*; in the first of *Scorpio*, and the first of *Pisces*; in the 15th of *Scorpio*, and the 15th of *Aquarius*; and in the first degree of *Sagittarius*, and the first of *Aquarius*.

Unto every one of these *Peripheries*, the Characters of the Signs of the *Zodiack* must be ascribed.

Proposition XXII.

To describe an Horizontal Scioterick, or an Horizontal Plain.

By the Globe. Let the *Pole* and *Meridian* be elevated for the *Latitude* of the place, which *Meridian* is more conspicuous than the other lines in the *Superficies*, both for colour and magnitude; let it be brought under the *Brass* *Meridian*; let the *Index* be placed at the hour of twelve; let the Globe be turned round, until the *Index* shew the hour One or Eleven; or until 15 degrees of the *Aequator* do pass the *Brass* *Meridian*. In this situation of the Globe, let the degrees intercepted between the *Brass* *Meridian* and the *Meridian* of the Globe be numbred on the *Wooden* *Horizon*, and let this hour be noted for the hour of One after noon, and Eleven before noon.

Then let the Globe be turned again, until the *Index* shew the hour 11 or 10, and let the degree intercepted between those two *Meridians*, the *Brass* one and that assumed, be noted for the 10th or 11th hour. After the same manner, let it be done for the hours 9 and 3, for 8 and 4, for 7 and 5, for 6 and 6, (but we shall not want this hour) for 5 and 7, for 4 and 8, for 3 and 9. These degrees being thus noted for every ascribed hour, let the *Meridian* line be found on the *Horizontal* *Plain*; and for any point of this line, let the *periphery* of the Circle be described as from a *Center*, and let it be drawn perpendicularly from the *Center* to the same, on either side. This shall be the line of the shadow at the hour 6 before noon, and 6 after noon. The *Meridian* line is the line of the shadow of the hour 12. In the described *periphery*, let the *Arches* before noted be cut off, beginning from the *Meridian* line towards the line of the hour 6, before and after noon. First, the Arch noted for 11 and 1; then for the hour 10 and 2, for 9 and 3, for 8 and 4, &c. The *Arches* thus cut off, let the lines be drawn from the *Center* to those bounds; these shall be the lines of the shadows in the beginning and end of the other hours.

But the *Style* must be so elevated from the *Center* of the *Horologe*, above the *Meridian* line, that the Angle which it maketh with it may be equal to the *Latitude* of the place, or elevation of the *Pole*. But it is more commodious to make some *Triangle*, whose Angle at the *Basis* is equal to the *Latitude* of the place. If the *declination* be made on Paper, let the line be drawn from the *Center*, which from the *periphery* may take an Arch equal to the *Latitude* of the place; (the Numeration being from the *Meridian* line,) and let the *Triangle* be cut out to be placed above the *Meridian* line; so the shadow will shew the hours. The making of this *Scioterick*, is easie without a Globe.

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Proposition XXIII.

To describe a Scioterick on a vertical Plain, which may directly regard the East and West Equinoctial.

A Scioterick, what.

The making of this is perfected after the same Mode, which we used in the Horizontal, if that the Pole be not elevated according to the Latitude of the place, but according to the Complement of it; and then the Style also be elevated above the Meridian, according to this Complement: but this is better learned by Instruction, than long Precepts.

Proposition XXIV.

To make a Scioterick in our Horizontal, or other Plain, which shall shew the hours of other places, although remote from ours.

This may be done on our Scioterick, which was made to shew the hours of our place. First consider, whether the place given lie East or West from ours; if Eastwards, the 12th hour must be reckoned there, before in our place; if Westwards, more later. Then let our place be brought to the Meridian, the Index to the hours; and let the Globe be turned until the other place come to the Meridian; the Index will shew what hour is in this place, when it is 12 in ours. From hence it is easie to collect the hours of that place, which may agree with the 1, 2, 3, 4; also 11, 10, 9, 8, &c. of ours, which then must be ascribed to them. But this may be done more elegantly without the Globe, according to the Mode that the Horizontals are composed.

Proposition XXV.

To elevate a Plain above the Horizon of our place, and in that Plain to make a Scioterick, in which the shadows of the Hours may seem to go backwards, as in the places of the Torrid Zone.

Because the Elevation of the Plain is left to our choice, therefore we shall chuse such an one as is commodious to our purpose: For Example, we shall so place the Plain above our Horizon, or above the Equinoctial line, East and West, that the Axis of the World, or Pole, may be elevated ten degrees above it. So the shadow shall begin to be retrograde, the Sun being entred into the 26th degree of Aries: and it shall so do, until the Sun comes to the 4th degree of Virgo.

Therefore let the Plain be so constituted, and the Horologue so made, that it may be in the place of the Latitude of 52, the Plain shall be elevated 42 degrees; so the Pole shall be elevated above that 10 degrees. In this Plain an Horizontal Scioterick may be made for the Elevation of the Pole 10 degrees. Where, when the lines of the shadows are brought from the Center of the Horologue, and extended far enough, let their parts about the Center be blotted out, and the Center also, and let a perpendicular Style be erected in any point of the Altitude of the Meridian line, such as shall exhibit a Gnomonical Triangle; and the extremity of this Style, by its shadow falling on the lines of the shadows, shall shew the hours, and also the shadow shall seem to be retrograde on those days.

Also by the assistance of the Terrestrial Globe, Meridional, Polary, and Inclining Sciotericks of all sorts may be described. But because this matter appertaineth to another Discipline, viz. to Dialling, therefore I think it unnecessary to treat of all these here.

CHAP.

CHAP. XXVIII.

Of the Comparifon of the Celestial Affections in divers places of the Earth.

From the consideration of the agreement and difference of the Celestial Appearances, in the divers places of the Earth, proceedeth the denomination of the Inhabitants, (which some have mistaken for the division,) by which some are said to be Antaci, others Periacti, and others Antipodes.

Those are said to be Antaci, or the Inhabitants of two places, which lye in the same Semicircle of the same Meridian, but from a divers quarter of the Equator, to wit, one towards the North, and another towards the South; but yet so, that they are equally distant from the Equator.

Periacti, are the Inhabitants of two places, which lye in the same Parallel, and in divers Semicircles of the same Meridian. Sometimes the word is taken for all the Inhabitants of any one Climate; but to avoid confusion, we shall abstain from that use of it.

Antipodes, are the Inhabitants of two places, which diametrically are opposed one to the other.

Note, That these three words are so taken for the most part, that they denote the Inhabitants of both places, which are compared as we defined them: but yet sometimes, when any certain place is adjoynd to them, they only denote the other place, as when we say, the Periacti, or Antipodes of this or that place.

Proposition I.

Those who live in the same Semicircle of the same Meridian, they have also the same Meridies, or 12 hours; and also reckon together all the other hours.

For the Meridies is defined by the existency or appulse of the Sun to the Meridian, because therefore those places of the Earth, which inhabit in the same Meridian of the Earth, have also the same Meridian of the Heaven; thence it is manifest, that the Sun in the same Meridian to those that inhabit it, maketh the Meridies and the 12th hour to them all at one time. Moreover an hour is defined to be that 24th part of that time, which intercedeth between two vicine Noons, or appulses of the Sun to the same Semicircle of the Meridian. Because therefore that it is the same time which intercedeth between the two Meridies of the places of the same Meridian; therefore also the 24th part of the same shall be equal, and the same in all; and on that account, they shall together number all their hours from the Meridies.

Proposition II.

They which dwell in the divers Hemispheres of the Earth, which the Equator maketh or distinguisheth; or those who live in the divers parts or quarters of the Equator; they, I say, have contrary Seasons of the year at the same time, and the same Seasons in a different time of the year: so that in one Hemisphere it is Winter, when as in the other it is Summer; and when the Spring is in that, Autumn is in this.

For the Summer beginneth in every place according to the Celestial course, viz. the motion of the Sun, when he obtaineth a small distance from the Vertex of the place: the Winter, when a great distance. Now because the

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See Scheme.

Of the denomination of the Inhabitants of the Earth.

Of the different Seasons which the Equator maketh.

Sun moveth from one Hemisphere to the other, thence it cometh to pass, that when it draweth near the places of one Hemisphere, it more and more departeth from the places of the other; and so the *Summer* of one Hemisphere agreeth in time, with the *Winter* of another; and the *Spring* of one with the *Autumn* of another.

In the places of the *Torrid Zone*, the vicissitude of the Seasons hath something peculiar, of which we have treated at large in the 26th Chapter.

See Chap. 26.

Proposition III.

Those who live in the Northern Hemisphere of the Earth, to them, when they turn their faces towards the Equator, the East is on the left hand, and the West on the right; the South before them, and the North behind them. Those who inhabit the Southern Hemisphere of the Earth, they turning their faces to the Equator, the Stars rise on their right hand, and set on their left.

Of those who live under the Equator.

Those who live under the very *Equator*, if they turn their faces towards the *Northern Pole*, they then have the *East* on their right hand, and the *West* on their left; but if they turn their faces towards the *Southern Pole*, it is contrariwise.

Those who live in the *Northern Hemisphere*, to them, their faces being turned to the *Equator*, the *Sun* going in the *Northern Semicircle* of the *Zodiack*, will seem to rise and set behind them; but perambulating the other *Semicircle*, he will seem before them. The contrary hapneth in the *Northern Hemisphere*: and the contrary will also be observed, if you turn your faces towards the *Poles*.

These are manifest from the consideration of his *circumvolution*, and may be illustrated on the *Globe*; but *Mariners*, and others, unskilful of the *Celestial motions* are wont to wonder at it, when they say from our Hemisphere into the *Southern Hemisphere*.

Proposition IV.

The Celestial Affections of the Antæci compared amongst themselves, are thus.

See Propof. 1.

1. They have the same *Meridies*, the same *Midnight*, and reckon all their hours together, as is manifest from the first *Proposition* of this Chapter.

Proposition 2.

2. They have contrary Seasons of the year at the same time; for when it is *Spring* in one place, it is *Autumn* in another; when that hath *Summer*, this hath *Winter*, as is manifest from the second *Proposition* of this Chapter.

3. The days of one place are equal to the nights of the other; and the days of this, to the nights of the former.

4. When the days of one place increase to the longest day, in the mean while the days of the other decrease, even to the shortest: for they have opposite equal days in their *Kalendar*. For Example; the day of one place at the twentieth of *April*, is equal to the twentieth of *October* in the other place.

5. On the days of the *Equinoctial*, the *Sun* riseth and setteth together to them; but on other days sooner to the one than the other: also in those two days the *Sun* hath the same altitude above the *Horizon* of the *Antæci*, at every moment of time; but on other days a different *Altitude*.

6. To those that turn their faces one towards another, or those who regard the *Equator*, to one the *Sun* shall seem to rise on the right hand, and set on the left; and to the other, to rise and set contrary. After the same Mode, all the *Stars* shall rise to one on the right hand, and to the other on the left.

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7. When the *Sun* riseth and setteth behind to the one, he riseth and setteth before to the other; contrariwise to this on the left hand, when to that on the right.

8. They have the divers *Poles* elevated by an equal Elevation.

9. The *Stars* appearing perpetually to one place, or not setting, never arise to the other place, but always remain depressed beneath the *Horizon*; contrariwise, those which never set to this place, never rise to that.

These are all manifest from the *Globe*.

Proposition V.

Those which inhabit in the Equator, have no Antæci; but the Periæci of those are the same with the Antipodes of these. The Poles of the Earth have no Periæci, for they are mutually one to the other Antæci, and Antipodes.

The truth of this *Proposition* is evident from the Definitions of the *Antæci*, *Periæci*, and *Antipodes*, and therefore needs no probation.

Proposition VI.

A place being given in the Globe, to exhibit the place of the Antæci, Periæci, and Antipodes of the same.

Let the place be brought to the *Brazen Meridian*, and as many degrees as are intercepted between this and the *Equator*, let so many be numbred from one part of the *Equator*: the term of the Numeration shall be the place of the *Antæci*.

Then let the *Index* be applied to the 12th hour of the *Cycle*, and let the point of the *Meridian* be noted, which hangeth over the place given, also that which hangeth over the place of the *Antæci*; this being done, let the *Globe* be turned round, until the *Index* shall shew the other 12 hours: so the point of the *Globe*, which is subjected to the noted point of the *Meridian* of the place given, shall be the place of the *Periæci*; and the point of the *Globe*, subjected to the other noted point of the *Meridian*, shall be the place of the *Antipodes*.

Proposition VII.

Those who live in the same Parallel of the Earth, have every day, and every night, equal: every one of the Stars also remaineth an equal time above their Horizons; the same Stars never set, the same Stars never rise: the Sun every day, and all the Stars also, rise and set to them in the same quarter; and in the same hour also the Stars are equally elevated above the Horizon, or depressed beneath it. They have the same Pole equally elevated; their faces being turned to the Equator or the same Pole, the Stars rise to them from the same side, and set on the same side: they have the same seasons of the year, Spring, Summer, Autumn, Winter together, and at the same time, excepting the singular properties of some places.

These are manifest from the very consideration of the motions of the *Stars*, and situation of the Places of the Earth. In the *Globe*, if that one certain *Parallel* be taken, and the *Pole* be elevated near its *Latitude* or distance from the *Equator*, the *Wooden Horizon* of all places shall be the *Horizon* of that *Parallel*, viz. if that every place be brought to the *Meridian*; and then will be manifest what this *Proposition* containeth.

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Proposition VIII.

The Celestial Affections of the Periæci, compared one with another, are thus :

The Celestial Affections of the Periæci compared together.

1. They have all those things common, which we have related in the preceding Proposition, concerning the Inhabitants of one and the same Parallel.

2. They reckon contrary hours of the day in reality, but yet the same in name, viz. when in one place it is Noon, and the 12th Meridian hour, then in the other it is Midnight, and the 12th hour of Midnight: and the Inhabitants of this, number 1, 2, 3 from Midnight, whilst they number 1, 2, 3 from Midnoon.

3. On the days of the Equinoxes the Sun setteth to one place, whilst it riseth to another, and therefore the time of the day of one place, is the night of another; but on other days of the year, viz. on the half year, in which the Sun runneth through the vicine Semicircle of those places of the Zodiac, that is, in the Spring and Summer, it first riseth to one place before he setteth to another; and therefore in some hours, or some parts of an hour, they have both the day and the night conspicuous together, viz. whilst the Sun tendeth towards the setting to one place, he beginneth to ascend towards the Meridian to the other, having now emerged above the Horizon: But in the other half of the year, Autumn and Winter, in which the Sun runneth the more remote Semicircle of the Zodiac, he first setteth to one place before he riseth to another, (viz. the Periæci;) and therefore they have no part of the day, but some part of the night common, and the Sun for some hours, or for some parts of the hours, depressed beneath the Horizon; so that to one place it is the end of the night, to the other, the beginning.

4. After the same Mode, those Stars which decline from the Equator, towards the Pole elevated to the Periæci, may be seen for some hours, or for some parts of hours, at once, viz. before they are set to one place, they are risen to another; and on the contrary, before they are risen to that, they are not set to this; and in this, for so much the longer time, by how much the Star is more remote from the Equator towards the Pole elevated. On the contrary, they never see those Stars together, which decline from the Equator towards the Pole, depressed to the Periæci; but they first set to one place, before they arise to another; and therefore for some time, or for some hours, or parts of the hours of the day, they are conspicuous to neither of the Periæci; and for so much the longer time, by how much the Star is more near the Pole; and those Stars, which remain continually to the Antæci above the Horizon, are perpetually obscured to the Periæci.

5. What place of the Earth, one of the Periæci hath in the setting Equinoctial, or to the West; the same the other of the Periæci, being about to shew, directs the digit to the Oriental quarter, whereof one part is common to the Antæci, the rest to the Periæci.

Proposition IX.

The Celestial Affections of the Antipodes, compared one with another, are thus :

The Celestial Affections of the Antipodes.

1. In all the days of the year the Sun and the Stars rise to one place, whilst they set to another; for they have the same Horizon, although a different face.

2. The day of one, is the night of another.

3. They have opposite equal days of the year, as also nights; so that the longest day of the one place, is the shortest of the other.

4. They have contrary seasons of the year at the same time, and the same seasons in an opposite time; viz. some have Spring, whilst the other hath Autumn; the one Summer, whilst the other hath Winter; and contrariwise.

5. They

5. They have the different Poles elevated by an equal Elevation, they are equally distant from the Equator; but that from the diverse quarters of it: they are seated in the same Meridian, but that is in its different Semicircles.

6. They reckon indeed the contrary hours of the day, but the same in name, viz. it is Noon to one place, whilst it is Midnight to the other.

7. What Stars continually appear to one place, or do remain above the Horizon, they perpetually remain beneath the Horizon of the other place: Also what Stars remain a long space above the Horizon of one place, they remain but a short time above the Horizon of the other place.

8. The Sun and Stars seem to rise to the Inhabitants of one place, on the right hand; to the Inhabitants of the other, on the left; if that both shall turn their faces to the Equator.

Proposition X.

The Periæci of one place are the Antipodes of the Antæci of that place, and the Antæci of the Antipodes of that place.

So the Antipodes of one place, are the Periæci of the Antæci of that place, and the Antæci of the Periæci: These are plain from the Definitions, neither do they need probation.

Proposition XI.

A place in the Globe being given, to find those places which have the same Hours and Meridies with the place given: also those places which reckon contrary hours and Midnight, when it is Midday in the place given.

Let the place given be brought to the Brazen Meridian: so all the places which are subject to the same Semicircle of the Meridian of this, or those places, which number at once all the same hours: then let the Index be placed at the 12th hour of the Cycle, and let the Globe be turned round until the Index shew the other 12th hour: so the places which are subject to the same Semicircle of the Brazen Meridian, are those reckon'd hours, contrary to the hours of the place given.

Sundry Questions wrought and performed by the Globe.

Proposition XII.

A place being given in the Globe, to find those places, in which all the days of the year are equal to the nights of the former place.

Let the place given be brought to the Meridian, and let the Parallel of its Antæci be found. All the places situated in this Parallel satisfy the demand.

But if that a place be required, whose days are equal to the nights of the place given, and all the hours of the same; then the place of the Antæci is only that sought for.

But if all the hours be contrary, the place of the Antipodes only satisfieth the demand.

Proposition

Proposition XIII.

A place in the Globe, and the day of the year being given, to find the hours in which the Inhabitants of that place, and its Antæci both together, may see the Sun, or in what hour the Sun is above the Horizon of both places; also the hour in which he is sooner seen in one place, than in another.

See Propof. 4.
Chap. 25.

Let the Longitude, or time of the stay of the Sun above the Horizon of the place given, at the day given, (according to the fourth Proposition of the 25th Chapter) be found; the hours in which this time is deficient from 24 hours, are the hours of the day in the place of the Antæci. For these two places have the Sun elevated together so many hours, as the day of the place given consisteth of hours, or the day of the Antæci, viz. of that day which hath no more than 12 hours, as he is in the days of the Equinoxes; but lesser than other days: Or, that I may speak more plainly, if the day of the place given is less than 12 hours, then the Antæci shall see the Sun on the same hours; but yet in more, to wit, before and after that time. But if the day of the place given be more than 12 hours, the number of the hours of the night must be taken: for so many hours together the Antæci shall see the Sun, and no more; and these hours are to be reckoned about the Meridies, because they have their Meridies together.

Then half of the difference of the days, (or the difference between the day and night of the same place) will shew the hours in which the Sun ariseth sooner above the Horizon of one place, and also setteth later than to the other place of the Antæci.

Proposition XIV.

A place being given in the Globe, and the day of the year, to find the hours in which the Inhabitants of that place together see the Sun with their Peræci, and what hours they do not see it together.

Let the place of the stay of the Sun above the Horizon of the place given, be found at the day given, and let the time of his stay beneath the Horizon, that is, the quantity of the day and the night, be found; half the difference between the quantity of the day and the night, will shew the hours, or part of the hours, in which the Sun first riseth to one place, before he setteth to another; and setteth later also to that place, than he ariseth to this.

CHAP.

C H A P. XXIX.

Of the Computation of time in the divers places of the Earth.

Proposition I.

The Hour of one place being given in the Globe, to find the hour of another place given.

Let the place, whose hour is given, be brought to the *Brazen Meridian*, the *Index* to that hour of the *Horary Cycle*, such as is given. Let the *Globe* be turned round until the other given place come under the *Meridian*, the *Index* in that situation of the *Globe* will shew the hour demanded of this other place.

By the Globe,
the hours of
the places are
found out.

Proposition II.

The hour of our place being given, (or of some other place in the Globe) to exhibit on the Globe all those places in which at that hour the Meridies is; also those in which it is Midnight; also those in which is what hour we please. The Problem should be propounded concerning the Earth, if we would act Scientifically; for it is an affection of the Earth. Under-stand the same concerning many other following Problems.

Let the place given be brought to the *Meridian*, the *Index* to the given hour of the *horary Cycle*. Let the *Globe* be turned round until the *Index* shew the 12th hour of the *Meridies*; so the places which are discovered to be subject to the superiour *Semicircle* of the *Meridian* (from the elevated *Pole* to the *Pole* depressed,) are those which have the *Meridies* at the time given. But if the *Globe* be turned round, that the *Index* may shew the 12th inferior hour, the places which are discovered to be subject to the same *Semicircle* of the *Meridian*, are those in which the *Midnight* then shall be.

If we desire places in which is any hour, let the *Globe* be turned until the *Index* shew that hour, if the places subject to the *Semicircle* of the *Meridian*, be those that are sought.

Proposition III.

The Altitude of the Sun being given, the day of the year, and the Latitude of the place, to find the hour at the time of that altitude.

Let the *Pole* be elevated for the given *Latitude* of the place: from the given day let the place of the Sun be found in the *Ecliptick*, and let that be noted in the *Ecliptick* of the *Globe*, and brought to the *Meridian*. Then let the *Quadrant* be applied to the *Vertex*, and let the degrees of the given *Altitude* be noted in it, and let the *Index* be placed at the 12th hour of the *Horary Cycle*.

Then let the *Globe* and the *Quadrant* be moved until the noted place of the Sun agree with the noted point of the *Quadrant*. In that situation the Sun will shew the hour demanded.

Rules for the
finding the
hour of the
day.

Proposition

Proposition IV.

A Quarter being given, in which the Sun is beheld sometime of the day given; and the Latitude of a place being given, to find the hour of the day.

Let all be done as in the preceding Proposition: that the *Quadrant* may be applied to the *Vertex*, let his end or extremity be brought to that quarter of the *Horizon* which was observed, and let the *Globe* be turned round until that point of the *Sun* come to the *Quadrant*. In this situation, the *Index* will shew the hour of the day.

Proposition V.

The Sun shining, by the benefit of the Globe, to know the hour of the place given; or the Latitude thereof, which is given.

Let the *Pole* be elevated for the given *Latitude* of the place, and let the *Globe* be placed at the four quarters of the World; then let a *Needle* be fixed perpendicularly at the place of the *Sun* in the *Ecliptick*; or, which is better, let the *Spherical Gnomon* be applied to the *Ecliptick*, so that the *Apex* of the *Gnomon* fix on the place of the *Sun*, and so let it be brought to the *Meridian*, and the *Index* to the 12th hour: let the *Globe* be turned, until the *Needle* make no shadow on the *Globe*. In this situation the *Index* will shew the demanded hour.

Proposition VI.

An hour of our Numeration being given, to find what hour it is from the rising of the Sun, that is, the Babylonish, or Norimbergian hour.

In time past the *Babylonians*, and now the *Inhabitants of Norimberg*, and some other People, reckon 24 hours from one rising of the *Sun*, to the rising of the *Sun* the next day.

Let the *Pole* be elevated from the *Latitude* of the place given, and the place of the *Sun* being found from the day given, let it be brought to the *Meridian*, the *Index* to the 12th hour of the *horary Cycle*: let the *Globe* be turned until the *Index* shew the hour given. Then the *Globe* remaining immovable, let the *Index* be reduced to 12, which being done, let the *Globe* be turned from the setting to the rising, until the place of the *Sun* appear in the *Oriental Horizon*: and in the *horary Cycle*, let the hours be reckoned from 12, toward the East or rising, even to the *Index*: for these are the *Babylonish* or *Norimberg* hours sought for.

Proposition VII.

On the contrary: The hour being given from the Babylonish rising, to find out the hour of our Numeration, which is from Midnight, or Midnoon.

Let the *Pole* be elevated for the *Latitude* of the place given, let the place of the *Sun* be noted in the *Ecliptick*, and brought to the *Oriental Horizon*, the *Index* to the 12th hour; let the *Globe* be turned towards the West, until the *Index* shew the hour given on the *Cycle* from the East. Which being done, let the *Index* be reduced to the 12th hour, and then let the *Globe* again be moved, until the place of the *Sun* be brought back to the *Semicircle* of the *Meridian* which is next passed through, and let the hours be numbred from 12 to the *Index* towards that quarter, unto which the motion of the *Globe* was made: so shall be found the hour of our numbring from the *Meridies*, or *Midnight*.

Pro-

Proposition VIII.

An hour of our reckoning being given, to find what hour it is from the preceding setting of the Sun, that is, the Italian hours.

At this day, in many places of *Italy*, and in times past in *Greece* they numbred 24 hours from one setting of the *Sun* to the following, or next setting; to find out which, we must thus do from the hours of our Numeration.

Let the *Pole* be elevated for the *Latitude* of the place given; let the place of the *Sun* in the *Ecliptick* be noted and brought to the *Meridian*; let the *Index* be placed at the 12th hour at Noon of the *Cycle*: let the *Globe* be turned until the *Index* shew the hour given. Then the *Globe* being immovable, let the *Index* be brought to the 12th hour; and this being done, let the *Globe* be turned towards the East, until the place of the *Sun* be beheld in the *Occidental Horizon*. Then let the hours be numbred from 12 to the *Index*, near the quarter of his motion; for these shall be the *Italian hours* of Numeration.

Proposition IX.

The hour from the setting of the Sun, or of Italic Numeration, being given, to find what hour it is of our Numeration from the Midnoon or Midnight.

Let the *Pole* be elevated for the *Latitude* of the place given; let the place of the *Sun* in the *Ecliptick* be noted, and brought to the *Meridian*; let the *Index* be placed at the hour 12; let the *Globe* be turned to the setting; until the *Index* shew the given *Italic* hour. Then the *Globe* remaining immovable, let the *Index* be brought to the 12th hour; this being done, let the place of the *Sun* be turned back to that *Semicircle* of the *Meridian* which it did nearest pass through, so the hours interrupted between 12 and the *Index* (numbring from 12 towards the rising) are the hours from the *Meridies* or *Midnight*, according to our numeration or reckoning.

Proposition X.

An hour of our Numeration being given on the day given, to find what hour of the day that hour is, according to the ancient Judaick account, and that of other Nations.

In Ancient times, the *Jews* and other Nations (*Astronomy* being not yet polished) divided every day, from the rising of the *Sun* to his setting, into 12 hours, and the night into as many, which hours are therefore termed *Judaickal hours*, *Planetary hours* (for another reason;) but more fully unequal hours; for seeing that neither the days or nights are equal amongst themselves, or of equal *Longitude*; but increase for half a year, and decrease the other half (except in the places of the *Aequator*,) thence it cometh to pass that those hours are sometimes greater, and sometimes lesser; for they increase with the *Longitude* of the days, and decrease with the decrease of the same. But in places near the *Aequator*, this increase is not great, as we have shewed in the 25th Chapter: but all the days of the whole year are almost equal; and thence it cometh to pass, that the People more remote from the *Aequator*, as those of *Europe*, never used these hours, but only those People who are not far removed from, or that dwell under the *Torrid Zone*.

Therefore the Problem may be thus more clearly propounded, viz. an equal hour being given in a given day, to find an unequal hour. An equal hour is termed the 12th part of any day or night, or of the time in which the *Sun* doth remain above, or beneath the *Horizon*. An unequal hour is termed the 24th part of that time, in which the *Sun* is moved from the *Semicircle* of the

Of Italian hours.

The Jews division of the day and night.

See Chap. 25.

Mariners observe the quarter of the Sun on the Compass.

the *Meridian*, until it return again to the same *Semicircle*, which time is called an *Astronomical day*.

Now for the Solution of this *Problem*, we must thus act:

Let the *Pole* be elevated for the *Latitude* of the place given; let the place of the *Sun* in the *Ecliptick* be noted, and brought to the *East*, the *Index* to the 12th hour of the *Cycle*: let the *Globe* be turned, until the noted place of the *Sun* come to the *West*; the *Index* will shew the hours for the *Longitude* of this day, or the stay of the *Sun* above the *Horizon*, which must be observed. Then let it be found, what is the hour given from the *East* or rising: (or from the *West* and setting, if that any hour be given after the setting of the *Sun*) according to the 6 or 8th *Propositions*. And let the proportion be compared after this Mode, that as the noted hours of the *Longitude* of the whole day or night are unto 24 hours, so the hours found from the rising, (or setting, if that an hour of the night be given) are to the number of the *Judaick* hours.

See Proposition 6 and 8.

Proposition XI.

The *Judaick* hour being given, in the day given to find what hour that is according to our *Numeration* or account; or to reduce a given unequal hour to an equal hour.

Of the *Judaick* hour.

Let the *Pole* be elevated for the *Latitude* of the place given; the place of the *Sun* in the *Ecliptick* from the day given being found, let it be brought to the *East*, the *Index* to the 12th hour; and let the *Globe* be turned to the *West*, that the *Longitude* of that day may appear in unequal hours on the horary *Cycle*, which is noted. Then let the place of the *Sun* be brought to the *Meridian*, the *Index* unto 12, and let the place of the *Sun* be turned round to the *Oriental Horizon*, the *Index* will shew the hour of the rising.

Then let it be brought to pass, that 12 be added to the number of the *Judaick* hours; so also let the found out *Latitude* of the whole be added to the other number, which if that be added to the hour of the rising, we shall have the hour from the *Midnight*, according to our *numeration*: if that the number of these hours be more than 12, let 12 be cast away, and the remainder will shew the hour from *Noon*.

Those *Judaick* hours which are related in the Sermon of *CHRIST*, cannot accurately be reduced to the hours of our account, because the day of the year is not added: so that the third hour of that day, may be our 8th, 9th or 10th; so that the 11th hour of that Sermon, may be our 7th, 6th, or 5th, viz. as that day may be taken either according to the *Summer* or *Winter Solstice*, or the *Equinoctial*.

Proposition XII.

Those who go from some one part of the *Earth*, or sayl towards the *Sun* rising, and the whole *Globe* of the *Earth* being encompassed by them, they return to the same place whence they set forth; they in the mean space, at once have often had the *Sun* rising, setting, the *Meridies*; and the *Midnight*, the very same with the *Inhabitants* of the place, from which they went from; and therefore when they return, they number one day of a year more than in that place. For Example, If in this place it be the first day of *January*, they reckon the second of *January*; if they account it to be *Saturday*, they reckon *Sunday*. And if they shall have sayled about the *Earth*, twice, thrice, or four times, they shall still number so many more days.

Those who by a determined course sayl about the whole *Earth* towards the *West*, they in the mean while for one space have the setting or rising *Sun*, the *Meridies* and *Midnight* more rare; and therefore when they return, they number one day less than in that place, to wit, the 31 of *December*; if in that

Of the compassing of the *Earth*.

that place it be the first of *January*, and *Saturday*, on the last day of the Week, when in this place it shall be *Sunday*, or the first day of a new Week: and if they have sayled round the *Earth* twice, thrice, or four times, they shall also reckon so many days less, and so on in respect whereunto.

This was a matter of wonder, and admiration some Ages ago to *Mariners* and others; but the frequency of this Experiment hath lessened the admiration, and hath administered occasion to *Mathematicians* to enquire into the cause.

Neither is it difficult to explain the same, for all the motion of the *Sun*, and the *Meridian* of the places of the *Earth*, be well apprehended, and a certain day of the year be proposed, for instance, let us take the *Winter Solstice* of the *Sun*, not from his proper motion, as some have thought, which will begin from any Circle; but for our more exact understanding it is very convenient to begin from the *Meridies*, that the day may be the time from one *Meridies* to the following *Meridies*, or *Noon*; or whilst the *Sun* returneth from the *Semicircle* of one *Meridian*, to the same *Semicircle*.

Therefore, because that those who sayl towards the *East*, or *Rising*, come to those places where the *Sun* first riseth, and maketh his *Meridian*, than in the place from whence they departed; thence it cometh to pass, that the *Sun* being in the *Meridian* of the place to which they have arrived, they begin to reckon a new day. For Example: the second day of *January*, where in the place of their departure hitherto they have numbered the first day of *January*, (if that they set sayl on the same), and the difference shall be one or two hours. This anticipation daily increaseth until they come towards the *East*, so that it shall make the hours of half a day, when they come to the opposite *Semicircle* of the *Meridian*; for here they shall have the *Meridies* of a new day, when in the place of their setting forth it shall be the *Midnight* of the preceding day. And where they shall come to the *Meridian* 12 degrees more remote, being in that, they shall have the *Meridies* 12 hours sooner, than in the place of their setting forth: and when again they shall come to a *Meridian* more remote 15 degrees, there they shall have the *Meridies* 14 hours sooner, than in the place of their setting forth. And so moreover, as they shall come to the *Meridies* or places more remote 15 degrees, they shall have the *Meridies* 16, 17 hours sooner, and shall begin to account a new day sooner, than in their place of their setting forth: so that when at length they shall have returned to the place, they shall then number the *Meridies* of a new day sooner by 24 hours, where in the place also the *Meridies* is, which yet may answer in number to the *Meridies* which the *Mariners* had the former day.

But it is contrary with those who sayl towards the *West*, when they return to the place from whence they set forth; for by how much the more they recede from this place, by so much the more they shall have the *Sun* later in the *Meridies*, because they are in a more remote *Meridian*, and therefore do later begin the account of their new day, than in the place whence they set forth: so that this *Proposition* taketh away an whole day in the return.

Corollary 1. If that two at the same time set forth from any place of the *Earth*, the one towards the *East*, the other towards the *West*, and they shall return both together to the same place, the whole *Earth* being sayled about: he that took his journey towards the *East* shall reckon two days more, than he which took it towards the *West*. And if they have sayled the *Earth* about twice, they shall reckon 2 days more; if thrice, 3 days more, &c. but the days of these are longer; of those, shorter.

Corollary 2. The same will happen, if that in any place of the *Earth* any two meet one the other; and from hence first, and then often afterwards, was this apparently discovered: for when *Ferdinando Magellanes* by a direct course into the *West*, had entered the *Indies* by the *Streights*, denominated from him, it was found out by the *Mariners*, which there met with other *Europeans*, brought towards the *East* by an ordinary journey, that the *Kalendar*, or the *Numeration* of the days, differed an whole day. The same hath been observed by all, which have sayled round the *Earth*, when they have come into the *Indies*.

Corollaries.

The day in
Macao, not the
same as in the
Philippine Isles.

Corollary 10. This also is the cause, that in two near places the account of a different day is observed, viz. in the Philippine Isles, and in the City of Macao, on the Coast of China, although they lie under the same Meridian; yet they reckon the days of the Calendar sooner in Macao, than in the Philippine Isles; and that by the anticipation of one day, so that it is Sunday in Macao, when but Saturday in the Philippine Isles. The cause of this diversity is this; that the *Horizon* sloping the City of Macao came thither from Europe towards the East, by a direct course out of Asia; but then *Spain* and the Philippine Isles, the *Horizon* came thither from Europe towards the West, by a direct course from America. Therefore it is inferred from their preceding Corollary, because here in *Macao*, and the Philippine Isles, they almost meet, and come into the same Meridian, that they should be acted by one day, the days of the other most mightily.

Proposition I. To find the place in which the *Globe* is placed, so that when the *Sun* shineth, the parts of the *Globe* may be illuminated, which the *Sun* enlighteneth in the Earth, in any place, and that it also may appear, unto what People the *Sun* shineth, and to whom it setteth; to whom it makes the Meridies, and to whom it is also the *Horizon*; to what place it is vertical, also to find the place of the *Sun* in the *Equinox*, and the day of the year, also the hour of the day.

The motion of
the *Sun* shew-
ed by the
Globe.

To find the place in which the *Globe* is placed be noted on the *Globe*, and brought to the Meridian; and let a mark be made with a *Chalk* on that point of the Meridian. Therefore if the *Globe* be to be hung by a Cord, the Cord must be tied to the point of the Meridian. But if that it must be placed firmly in any place, an Iron pin must be brought through the Center of the *Globe*, even to the opposite point; and this Iron pin must be closely fixed to the Horizontal plane, that it may remain immovable.

The *Globe* must be disposed according to the four quarters of the World, viz. that the North part of the *Globe* may regard the North part of the Earth or Heaven; which, the Meridian line being found, is easie to do by the *Magnetic Compass*, or the *Magnetic Needle*. The *Globe* being thus placed, at every moment of the day, when the *Sun* shineth, on the *Globe* may be seen the part of the Earth illuminated, and the part not illuminated. Those places which lie in the middle *Semicircle* of the part illuminated, are those which will have the Meridies at that moment of time. To those which are seated in the Oriental *Semicircle*, dividing the illuminated part from the part not illuminated, the *Sun* setteth; but to those which are in the Occidental *Semicircle*, separating the illuminated part from the part not illuminated, the *Sun* riseth. To find out the place of the *Sun* in the *Ecliptick*, let the *Needle* or *Spherical Gnomon* be moved hither and thither perpendicularly about the middle of the part illuminated, until it maketh no shadow; and let the point in the *Globe* be noted, for this being brought to the Meridian, here will shew the declination of the *Ecliptick* point, in which the *Sun* is at the time of the Observation; whence, according to the condition of the time; to wit, *Spring*, *Summer*, *Autumn*, or *Winter*, the place of the *Sun* shall be known; and thence the day of the year.

Also the place in the *Globe*, unto which the *Needle* being affixed gave no shadow, is that to which the *Sun* is vertical at that moment of time, and the Parallel passing through this place will exhibit all the places, in which the *Sun* will be vertical on that day.

More-

Moreover, to find the hour of the place in which the *Globe* is so placed or hung, let that place be brought to the Meridian, to which the *Sun* is vertical, the Index to the 12th hour of the horary Circle; and let the *Globe* be turned round until our place, or that in which the *Globe* is seated, do come to the Meridian; the Index will shew the hour.

But because the *Globe* cannot be turned round, when it is affixed by the Iron Style to the Horizontal plane, wherefore it will be convenient that the Quadrant be tied to the Pole, or part of the Circle of the Periphery, for here the *Sun* being brought into the plane of the *Equator*, will shew the declination of the *Sun* from the *Equator*, when the place of the *Sun*, and the day of the year shall be found. The same Index will shew the *Hour* of the day, from whence it is that the *Hour* is to be numbered to the *Hour* of the day, and the *Hour* is to be changed into *Hours*, or parts of hours, you shall have the hour of the place. If so be that the *Sun* be between the Occident and the Brazilian Meridian, that is, of our place; but if that it be between the East and our Meridian, the hour found out must be subtracted from 12, and the remaining number will shew the hours from *Midnight*.

That such a *Brazilian Arch* be joyned to the Pole of the *Globe*, as I have described, in 23 degrees, it may be bored through from the end even to the degree; that is, from the departure of the *Sun* from the *Equator*; and a turning Plate be inserted in it, which may bear the perpendicular Style; and so there will be less obnoxious to errour, no doubt, and will be more useful.

Proposition II. The Terrestrial *Globe* being so placed, as in the former Proposition is declared, it will also shew when the *Moon* shineth, to what People, at any moment of time, in which it is above the *Horizon*, and conspicuous; to whom it riseth, to whom it setteth, and to whom it makes the Meridies.

These are all manifest from the preceding Proposition.

Proposition III. By how much the places of the Earth are remote from the Parallel of the *Sun* on any day, by so much the *Sun* is elevated to a lesser Altitude in the same hours above their *Horizon*.

Let the places in the same Meridian be taken in the *Globe*, for these do reckon all the same hours, and that at once; then let a Parallel be described for any assumed day; and it will be manifest, that any point of this Parallel is farther distant from the more remote places, than from the places more near. The *Sun* therefore being above, the points of this Parallel will be farther distant from the Vertex of the remote places, than from the Vertex of those that are nearer; and therefore he shall be less elevated over the *Horizon* of those places, than of these.

Proposition IV. By how much the places of the Earth are more remote from the *Equator*, or more near the Pole, by so much the more the parts of the *Horizon* are distant, in which the *Sun* riseth on the day of the Solstice, and the day of the Winter; as also those in which he setteth. The same is true concerning the *Moon* and all the Planets.

Take what places you please of a diverse distance from the *Equator*, and let the Pole be elevated for the Latitude of every one of them, and let the points be noted in the *Horizon*, in which the Tropics of *Cancer* and *Capricorn* cut it.

A comparison being made, the truth of the Proposition will appear. This is also shewed the same way, by how much the places are more remote from the *Equator*, by so much the more the *Sun*, in his *Equinoctial* rising, is distant in the East on every day of the year. The Astronomers term it, the rising Amplitude.

Propo-

Proposition VI.

Stars placed between the Parallel of any place lying without the Equator, and the Pole, are less elevated above the Horizon of the places between this Parallel, and the other Pole of those situated there, than above the Horizon of the places situated between this Parallel and the nearer Pole.

Of the elevation of Stars, &c.

The Parallel of any Star may be designed on the Terrestrial Globe, or a point only noted for a Star, and any place more remote from the Pole being assumed, designeth the Parallel of the place. Then taking another place situated towards the other Pole, the Ray of the Star above the Horizon of both places may be found, and the truth of the Proposition will be manifest.

Proposition VII.

In places situate in and near the Equator, the Sun, and Stars directly ascend above the Horizon, even to the Meridian, and descend again: but in places situate above the Equator, they obliquely ascend and descend; and so much the more obliquely, by how much the place is more remote from the Equator.

Of the ascension and descent of the Sun and Stars.

Let any Parallel of the Sun be described on the Globe, such as some already are delineated on the Globe, viz. the Equator, the Tropicks, and some Intermedial ones: then let the Pole be placed in the very Horizon, that it may be the Horizon of the places of the Equator, and it will be evident, that the points of the Parallels directly ascend from the Horizon to the Meridian. Then let the Pole be elevated for the Latitude of any other places, and it will appear that the Parallels are so much the more oblique to the Horizon, by how much the more the Pole is elevated; that is, by the Wooden Horizon becometh the Horizon of the places more remote from the Equator, or nearer to the Pole.

Proposition VIII.

By how much the place is more remote from the Equator, by so much the more the Signs of the Zodiack, and the other Constellations, require the greater time to arise, and set; and they pass through the Meridians of all places at an equal time.

Let two places be taken on the Globe, unequally distant from the Equator, and let the Pole be elevated, and observed separately for each of them, how much time any Sign of the Zodiack requireth to ascend above the Horizon; viz. the entrance of the Sign being brought to the Oriental Horizon, let the Index be placed at the 12th hour, and the Globe be turned round until the whole Sign be rising: the Index will shew the hours elapsed in the space, whilst the Sign arose; for by the comparison of the time, the truth of the Proposition will be manifest.

Proposition IX.

The day of the year being given, to find, or shew on the Globe those places, in which the Sun riseth in any given quarter.

To find the rising of the Sun in any quarter, by the Globe.

This Problem, and those that follow, should be propounded and resolved concerning the Earth it self, if that we would act according to Art: for these affections belong unto it; but they are propounded concerning the Globe, because here it representeth the Earth; although another method must be used in the Earth, or another construction, which although it can only be comprehended by the mind, is sufficient, that it may hinder in the practice by reason of the obstacles.

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This is the same with that Problem, The day and the quarter being given, in which the rising of the Sun was observed, to find the Latitude of that place, or its Parallel, in any point of which it is manifest that we are placed. The Solution of which we have delivered in the 23 Chapter, Proposition II.

See Chap. 23. Proposition II.

Proposition IX.

The day and the hour, or part of the hour being given, to shew the place on the Globe to which the Sun is then vertical.

First let the place of the Sun, from the given day being found, be noted on the Ecliptick of the Globe, and that being brought to the Meridian, let a mark be made with a Chalk on the super eminent point; then let those places be found, in whose Meridian the Sun was at the given moment of time, and let them be brought to the Brazen Meridian. These being done, that place which is subject to the noted point of the Meridian is the place which is demanded, viz. that to which the Sun is vertical at the given moment of time.

Proposition X.

The day and the hour being given, to shew all the places on the Globe, from whose Vertex the Sun is distant the given degrees at that hour; but the given degrees must not exceed a hundred and eighty. Or the day and the hour being given, to shew on the Globe those places, above whose Horizon the Sun hath the given Altitude, or the given depression beneath it; but the Altitude given must not exceed 90 degrees, as likewise the depression.

Further note.

Let the place be found on the Globe, to which the Sun is vertical at the hour given, and let this be brought to the Meridian, and let the Quadrant be affixed to the imminent point of the Meridian. Let the degree of distance from the Vertex given be noted, and the Quadrant be turned round, the Globe remaining immovable; all the places of the Earth through which the noted degree of the Quadrant passeth, are those from whom the Sun hath the given distance, or above whose Horizon the Sun hath the given Altitude.

Proposition XI.

At the given hour of the day, to shew on the Globe all plains unto which the Sun riseth and setteth, and to which he is fixed at the Meridian; and all that are illuminated, and not illuminated.

Let the place be found in the Globe, to which the Sun at the time given is vertical; and let the place be brought to the Meridian, and the Pole elevated for the Latitude of that place; or let that place be placed in the vertex of the Horizon. So all those places which are discovered under the Semicircle of the Meridian above the Horizon, shall have the Meridies; but those places which are beheld in the Oriental Semicircle of the Horizon, are those to which the Sun then setteth; but to those which lie in the Occidental Semicircle of the Horizon, the Sun riseth at the given time, and all the places which are above the Horizon are illuminated by the Sun: on the contrary, all the places situated beneath the same, then want the presence of the Sun.

Further, concerning the rising and setting of the Sun, found out by the Globe at any day, or hour of the day.

Note, that the Problem must be understood of the rising and setting of the body of the Center of the Sun: for the body of the Sun illustrateth part of the Earth somewhat bigger than the Hemisphere, which, how big it is, shall be discovered in the following Proposition. Therefore we may shew the places to which the Sun riseth or setteth, when we have Noon or Midnight: And contrariwise, those in which he setteth, when he riseth to us, who then have Midnight, or Mid-day.

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Proposition XII.

The Semidiameter of the Sun and Earth being given, and the distance of the Sun from the Earth being known, to find out the part of the Earth which the Sun illuminateth.

See Scheme.

Let the *Semidiameter* of the Earth be *AB, AC*; *A* the Center; *AB, CDE* the greatest circle of the Earth; *S* the Center of the Sun; *SL, SO* the *Semidiameter* of the Sun; *LB, OC* the rays touching the Globe of the Sun and Earth: for these distinguish the part illuminated from the part not illuminated; therefore the Arch *BEC* representeth the part of the superficies of the Earth illuminated, and the Arch *BDC* the part not illuminated. Let the *Tangents* *LB, OC* be extended until they concur in *R*, and *BN* parallels to *AS*: therefore in the Triangle *BNL*, let *NL* be given; the excess *SL* above *AB*, and *BN* of equal distance to *AS*; the Angle *BNL* is direct, because that *BL* toucheth the Circle. Wherefore in the Triangle *BNL*, let the Angle *NBL* be found according to this Proposition: that as *BN* is to *NL*, so are the whole sides to the Tangent of the Angle *NBL*. Moreover the two Angles *LN, NBL* are together equal to one straight or 90 degrees, and *BNL* is equal to the Angle *ASL*, or *BAR*.

Therefore the Arch of the Angle *NBL* is equal to the Arch *BM*, by which *PB* is greater than 90 degrees, or than *PM*: so also the Arch *PC*.

If we take the *Semidiameter* of the Sun, according unto *Prologus*, of 5 *Semidiameters* of the Earth; but the distance *AS*, 1168 *Semidiameters*: these, I say, being laid down, the Arch *MB* will be found 13 minutes, in which the Sun illustrateth the Earth more than half *MPQ*.

Corollary. When therefore the Center of the Sun riseth to some places, then his limbus or edge riseth to the People which inhabit in the parallel of the Horizon, situated 13 minutes beneath the Horizon; also after the same Mode to those to whom he setteth. And when his Center setteth, then his limbus yet remaineth conspicuous, until the Center setteth to the People, which are remote 13 minutes from our Horizon.

Proposition XIII.

The height of a Mountain being given, to find how much sooner the Sun seemeth to rise in the Vertex of the same, than at the foot or root of the Mountain; and how much later it setteth.

See Chap. 9. Proposition 5.

From the given Altitude, by the fifth Proposition in the ninth Chapter, let the interval or Arch from which the Vertex of the Mountain may be discovered, or in the bound of which, a line so drawn from the Vertex of the Mountain, that it may be the Tangent of the Earth, refracteth the same: for this line sheweth the first ray, which may come from a direct passage from the Sun to the Vertex of the Mountain. Moreover, the point of the Earth in which this is touched by the line, is the place to which the Sun ariseth, when he beginneth to be seen on the Vertex of the Mountain, and the Arch interrupted between that point and the foot of the Mountain, is equal to that in which the Sun is depressed, as yet, beneath the Horizon of the foot of the Mountain, when he is apparent in the Vertex.

Therefore the Problem is reduced hither; The depression of the Sun beneath the Horizon being given, to find the time which is spent whilst the Sun moveth from the depression to the Horizon; whence also it will be manifest, that this time is also diverse in the divers days of the year. Therefore let the place of the root of the Mountain be noted on the Globe, and let the Pole be elevated for the Latitude of the same; let the Quadrant be affixed to the Vertex. The place of the Sun being found in the Ecliptick from any day taken, let it be noted; also the

the Point of the Ecliptick opposite to the place of the Sun. Then let this opposite Point be brought to the Occidental Horizon, and let the Index be placed at the hour 12. This being done, let the Degree of depression before found be noted in the Quadrant, and the opposite Point be turned above the Horizon, until it hath an Altitude equal to the Arch of the depression, which will be discovered from the application of the Quadrant to the place of the Sun beneath the Oriental Horizon, will have that Depression. And the Index in the Hourly Circle will shew the time intercepted between that depression of him, and his emersion above the Horizon.

But because in this case we do almost work only by Minutes, therefore it is better to calculate it; than to search after it on the Globe. Now you shall find it if that the Altitude of the Mountain be placed 3 *stadia*, or 1 of a *German mile*; because the Arch of the depression is about three Degrees, and if the Latitude of the Foot of the Mountain be 38 Degrees; and the place of the Sun about the middle of Leo, the time in which the Sun is beheld, is sooner in the Vertex, than at the Foot of the Mountain by 13 Minutes. Hence it is manifest, that that is not so probable which Aristotle relateth of the highest parts of Caucasus, and Pliny of the top of Mount Casius, that they before the rising, and after the setting of the Sun, are illustrated with the Sun Beams, even to the third part of the night. Now how great an Altitude is required for this; shall be shewed in the following Proposition.

Proposition XIV.

The time being given in which the Sun is sooner discerned on the Vertex of the Mountain, than at the foot of the same; to find the Altitude of the Mountain.

Let the Pole be Elevated on the Globe, for the Latitude of the Root of the Mountain; and the Point being noted, which is opposed to the place of the Sun in the Ecliptick; let the Arch of the depression of the Sun beneath the Horizon, for the given time, be found. Then from this Arch, as from an interval, from whence the Vertex of the Mountain is discovered, the Altitude of the Mountain must be searched after by the Fourth Proposition of the Ninth Chapter.

Proposition XV.

The places of the Moon being given in the Zodiac, together with its Latitude, to find out, or shew all those Places on the Globe, to which the Moon is Vertical in the Circumrotation of that day.

Let the place of the Moon taken from the Ephemerides, be noted in the Ecliptick, then let one end of the Quadrant be applied to the Pole of the Ecliptick; the other to the Point noted in the Ecliptick; or to the place of the Moon, and let the Degrees of the Latitude of the Moon be accounted on the Quadrant, and let a mark be made at the term of the Numeration on the Globe; then this being brought to the Meridian, and a Chalk applied; let a Parallel be described, which the Moon that day doth describe by her Circumvolution; and all the places situated in this Parallel, are those demanded.

After the same Mode we act with the other Planets, if their Longitude and Latitude be given.

The Mountains of Caucasus, and Casius according to Aristotle, and Pliny, are illustrated with the Sun's rays to the third part of the night.

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Proposition XVI.

The place of the Moon being given in the Zodiack, and its Latitude, and the day of the year, to find the hour, in which she riseth in any place given, and in which she setteth; also in which she maketh midnight.

Let the Pole be Elevated for the Latitude of the place of the Earth given; let the place of the Sun found from the day of the year, be noted on the Ecliptick. Then let a point also be noted on the Globe for the place of the Moon, as we have shewed in the preceeding Proposition. This being done, let the place of the Sun be brought to the Meridian, the Index to the 12th hour of the Circle, and let the Globe be turned round until the Moon arise, or be in the Meridian, or set. For the Index in the Circle will shew the hour of her rising or setting, or being in the Meridian, or setting. After the same manner we must act with the other Planets.

Proposition XVII.

To shew on the Globe all those places, in which the Moon riseth at the given hour, and in which she is in the Meridian, and to which she setteth, if that the Longitude and Latitude of the Moon be known.

Let the place of the Sun, as also of the Moon, be noted on the Ecliptick, as aforesaid, and the place of the Sun being brought to the Meridian, and the Index to the 12th hour of the Circle, let the Globe be turned until the place of the Moon come to the Meridian, and let the hours be observed on the Circle, which are noted, or let a mark be made on the Circle: for they shew how much later the Moon cometh to the Meridian, than the Sun. Moreover the place of the Moon being constituted in the Meridian: let the eminent point be noted in this; or let the Parallel of the Moon be described. This done, let the place of the Sun be brought to the Meridian, and the Index to the 12th hour. Let the Globe be turned until the hour be found, in which the Moon toucheth the Meridian of the place: Let the point also of the Meridian be noted, which hangeth over the place of the Moon. Moreover let the place whose hour is given, be brought to the Meridian, the Index to the hour given: let the Globe be turned until the Index shew the 12th hour of noon, or midnight; so the places are those subject to the Semicircle of the Meridian, in which the Sun maketh the Meridies at the hour given: Let the Index be reduced to 12, and let the Globe be turned again until the Index come to the hour noted before in the Circle. In this situation of the Globe, the place which is subject to the noted point of the Meridian, is that to which the Sun is then Vertical.

Therefore let this place be constituted in the Globe in the Vertex of the Horizon, all the places are those subject to the Superiour Semicircle of the Meridian, to which the Moon is then in the Meridian: but those places which are discerned in the Oriental Semicircle of the Horizon, are those to which the Moon then setteth. Lastly in those places, which are discerned in the Occidental Semicircle of the Horizon, the Moon riseth at the given moment of time. After the same Mode we act with Saturn, Jupiter, and the rest of the Planets, if that their Longitude and Latitude be known,

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Proposition XVIII.

The day, or hour being given, in which the Ecliptick of the Moon shall be, or hath been, to exhibit on the Globe all those places which have seen it, and in that species, to whom the Moon shall be in the Meridian, to whom it shall arise, and to whom it shall set Eclipsed.

This Problem little differeth from the precedent, but yet it hath a more easy Solution.

From the day given, let the place of the Sun be found, except it be already known, and let the Point opposite to it be noted on the Ecliptick of the Globe, for this is the place of the Moon.

Let the place be found in the Globe to which the Sun is Vertical at the hour, and let the Antipodes of this place be found according to the VI. Proposition of the XXVIII. Chapter, for this shall be the place, unto which the Moon being Eclipsed, shall be Vertical. Let this place be constituted in the Vertex of the Horizon, the Pole being elevated or depressed for the Latitude of the place, to all the places of the Globe which are above the Horizon, may have seen that Eclipse: and those which lie under the Brazen Meridian, shall see it in the Meridian: those which lie under the Oriental Semicircle, shall see it in the West, or setting with the Eclipse; but those which lie in the Occidental Semicircle of the Horizon, shall see it in the East, or Noon to arise Eclipsed.

But seeing that an Eclipse is not performed in one moment of an hour, but dureth for some hours, therefore it is wont to be divided into the Beginning, Middle, and End, and the Moments of the hours are wont to be noted, therefore the consideration must be more especially concerning the middle time of the Eclipse. Moreover, seeing that the Moon is less than the Earth, it will illustrate a lesser part than the Hemisphere is; also it will be seen by the Inhabitants of a lesser part, so that it will not be any more conspicuous to those which lie in the Oriental Semicircle of the Horizon: but to those in the Occidental Semicircle it hath not yet appeared, but a certain Circle Parallel to the Horizon is to be seen, which terminateth the part illustrated. Now how much this part is distant from the Hemisphere, or how great a portion it is of the Superficies of the Earth, shall be the enquiry of the following Proposition.

Proposition XIX.

The Semidiameter of the Moon, and Earth being given, and the distance of them, to find out how long a portion of the Earth is illustrated by the Moon at the Full.

This Problem must be solved by the same Mode that we have used in the Eleventh Proposition: For let the Center of the Earth be S, the great Circle representeth the Superficies, O F L H. The Center of the Moon A, the greatest Circle C P B Q. Let the Tangents L B, O C, be drawn. For these are the ultimate rayes that can come from the Moon to the Earth, and therefore the Arch O H L, will denote the part of the Superficies of the Earth, which is illustrated by the Moon, and whose Inhabitants may see the Moon together, which by how much lesser it is than the Hemisphere, we shall know if we find the Angle H S L, or the Arch H L. Let B N be drawn from B, Parallel to A S, B A shall be equal to S N, and N L, the excess of the Semidiameter of the Earth S L, above the Semidiameter of the Moon A B, and B N is of an equal distance with A S: but the Angle N L B is direct, or of 90 Degrees. Therefore in the Triangle Straight Angle N B L, we shall find the Angle N B L by this proportion. As N B is to N L, so are the whole Signs to the Signs of the Angle L B N, whose Arch is that in which H L differeth from the Arch 90, or from the Quadrant of the Periphery of the Earth, and so great an interval is the Periphery of the Earth distant from the greater Circle, terminateth the part of the Earth illuminated by the Moon. Let us suppose the Semi-

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See Proposition 15.

By the Globe are shewed all the places in which the Moon riseth, and setteth at any hour.

See Proposition 18. Chapter 28.

See Scheme.

See Proposition 11.

diameter of the Moon to contain four parts, of such like the Semidiameter of the Earth contains 15, or $\frac{1}{4}$ of the Semidiameter of the Earth: now the greatest distance of the Moon from the Earth in her Full, is 64 Semidiameters of the Earth. Therefore NL shall be $\frac{1}{4}$, and the proportion shall be made thus: as 64 is to $\frac{1}{4}$, so is 10000000 to 114583, which is the Sign 39 Minutes. Therefore the Arch HL, is less than 90 Deg. 39 Minutes; and therefore 89 Deg. 21 Minutes.

Therefore in the place to which the Moon is Vertical constituted in the *Vertex* of the Horizon, the People to whom the Moon then riseth and setteth, shall not be those which are beheld in the very Horizon, but those in the Parallel of the Horizon, distant from it 39 Minutes.

Proposition XX.

The Declination of any Star being given, to exhibit all the places on the Terrestrial Globe, unto which that Star is Vertical in his Diurnal Circumvolution.

Of the Declination of Stars.

Let the Degrees of the given Declination of the Equator, be numbred on the *Brazen Meridian*, and in the term of the Numeration make a sign with a Chalk, or let a Parallel be noted on the Globe by a Chalk applyed, and the Globe turned round, all the places situated in this Parallel, are those, which pass through the noted Point of the Meridian, the *Vertex* of which that Star in every Diurnal Circumvolution shall possess for some moment of time.

Proposition XXI.

The direct Ascension of any Star being given, and the hour of the given day being given, to shew all those places on the Terrestrial Globe, on whose Meridian the Star is at the given hour.

Concerning the Ascension of any Star.

Let the Degrees given of the right Ascension of the Star be numbred in the Equator, and let a mark be made with Chalk. Let also the place of the Sun found from the given day, be brought to the Meridian; and let the Degrees of the Equator in the Meridian be noted. Let the Arch of the Equator intercepted between these two noted Points be observed, or which is the same, let it be changed into hours, or scruples of hours: for they shew the time which intercedeth between the Appulse of the Sun, and that Star at any Meridian. This done, let the places be found in whose Meridian the Sun is at the given hour, or scruple of an hour, and the Index being placed at 12, let the Globe be turned until the Index shew the hour before noted, or until the noted Degrees of the Equator have passed the Meridian. In this situation of the Globe all those places which are discovered subject to the Meridian, are those sought for, to wit, those in whose Meridian the Star is at the given time.

Proposition XXII.

The right Declination, and Ascension of a Star being given, and any time of the day being given, to exhibit on the Globe first, that place to which the Star is then Vertical. Secondly, all those places above whose Horizons the Star then shall be, and those beneath whose Horizons the same shall then be: also those, in whose Meridian it shall be at the Meridies, and in whose Meridian it shall be at midnight: also in all those places, in which the Star shall then arise, and all those in which it shall then set.

From the direct Ascension, let the places be found in whose Meridian the Star is at the time given, and those may remain subject to the *Brazen Meridian*. Then let the Degrees of the given Declination from the Equator, towards the Pole be numbred, and the Point of the Globe which is subject to the term of the Numeration be noted. For this is the place, unto which the Star shall be Vertical.

Vertical at the time: Let it be placed in the *Vertex* of the Horizon, the Pole being Elevated for Latitude, so those places which are subject to the Superior Semicircle of the Meridian shall have that Star at the given time in the Meridian of the Meridies. But those places which are beheld in the Interior Semicircle of the Meridian, shall have it in the Meridian of Midnight: and those places which are beheld in the Oriental Semicircle of the Horizon, are those to which the Star setteth at once at that time: but to those which lie in the Occidental Semicircle of the Horizon, the Star then ariseth together.

Proposition XXIII.

To exhibit on the Terrestrial Globe all those places, in which the Sun, Moon, and all the Stars, for so long time are obscured beneath the Horizon, as they remain to us, or any other given place above the Horizon.

Let our place, or any other given place be brought to the Meridian, and let the Parallel of the *Arctic* be found; all the places situated in this Parallel, are those sought for, as may be shewed on the Globe, if that the Pole be Elevated for the Latitude of the place given, and depressed for the Latitude of the Parallel found.

Proposition XXIV.

To shew the Cause why the days sooner augment and decrease about the Equinoxes, and more slowly about the Solstices, where for many days there seemeth to be no increase or decrease, and that except the Equator, in all the places of the Earth, and so much the more, by how much they are more removed from the Equator.

For Example, Let us take 30 days before the *Vernal Equinox*, (from the 20 of February, to the 21 of March) and 30 days after the *Solstice of Winter*, or the *Solstice of Capricorn* (from the 21 of December, to the 21 of January); here the Cause must be shown, why the excess of the 21 of March, (or stay of the Sun above the Horizon) above the Longitude of the 20 of February be much greater, than the excess of the 21 of January, is above the 21 of December.

Let the place of the Sun for every one of those 4 days be noted on the Ecliptick of the Globe, to wit, the first Degree of *Pisces*, of *Aries*, *Capricorn*, and *Aquarius*, and let the Parallels of the Sun be described, whereof two are extant in the Globe, viz. the Equator, and the Tropick of *Capricorn*. Therefore it will be apparent, that the Equator, or Parallel of the Sun in the 1 of *Aries* is absent a far longer interval, from the Parallel of the Sun in the 1 of *Pisces*, than the Parallel of the Sun in the 1 of *Aquarius*, from the Parallel in the 1 of *Capricorn*. Thence it cometh to pass that not much a bigger portion of the Parallel of the 1 of *Aquarius* is above the Horizon, than of the Parallel of the 1 of *Capricorn*, or of the Tropick of *Capricorn* it self. Now these parts shew the stay of the Sun above the Horizon in those daies, but the portion of the Equator, or Parallel of the 1 of *Aries*, that is above the Horizon, is much bigger than the portion of the Parallel of the 1 of *Pisces*. Now because these Arches being above the Horizon, denote the stay of the Sun above the Horizon, for this is the Longitude of the day, hence we collect the increase or decrease of the Declination of the Sun from the Equator (or of the Points of the Ecliptick) to be the Cause of this unequal increase of the days, but in the places of the Equator it self, all days are equal, and therefore here is no increase or decrease: although the Sun seem to stand about the days of the *Solstice*, that is a little changing the Meridian Altitude.

Now it is manifest, that the greater inequality of this encrease and decrease of the days is to be found, where the places are more remote from the Equator, if that the Pole be Elevated for the distance of the divers places from the Equator; and the Arches of the Parallels Elevated above the Horizon, be considered in both situations.

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Concerning the augmenting and decreasing of the days about the Equinoxes and Solstices.

Proposition X XV.

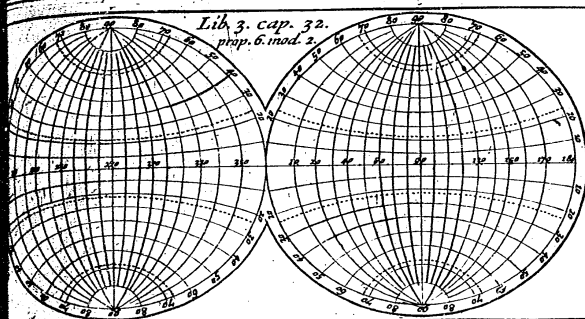
In the places of the Torrid Zone, or those situated in the Æquator, or in the midst of the Torrid Zone, the Sun much sooner departeth from the Vertex, than in places near the Tropick of Cancer, or Capricorn.

Of the departure of the Sun in places of the Torrid Zone.

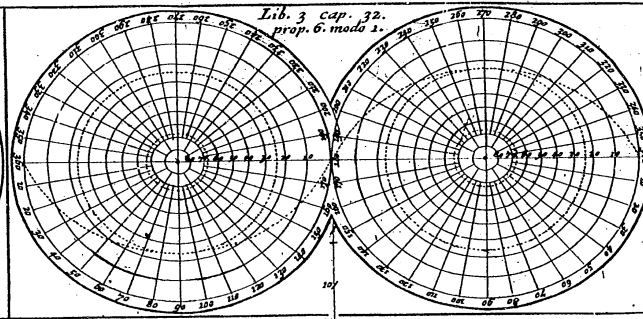
Let any Degree in the *Brazen Meridian* of the Globe be noted, for Example, the Fifth Degree from the Æquator, and another place in the Torrid Zone being taken, for Example, one whose Latitude is 18 Degrees. Let this be brought to the Meridian; make a sign with a Chalk in this, and let 5 Degrees from this towards the Tropick be reckoned on the *Brazen Meridian*, and here again make a sign with a Chalk. We must shew that the Sun in fewer days is removed from the *Vertex* of the places of the Æquator, 5 Degrees in the *Meridies*, than from the *Vertex* of another place so many Degrees.

Let the Globe be turned until some Point of the *Ecliptick* come under some noted Point of the Meridian near to the Æquator. And let the Degrees of the *Ecliptick* between the first of *Aries* and *Libra*, and between that Point and the Arches here to be noted. Then let the Globe be turned again, until some Point of the *Ecliptick* pass through the Note made in the Meridian for the place, and let this Point of the *Ecliptick* be noted: then let the Globe be turned again until another Point of the *Ecliptick* pass through by that Point, removed five Degrees which is noted, which must again be noted: and let the Arch between the two last Points of the *Ecliptick* be reckoned, which will be found to be much bigger, than that which was first noted; and thence the Sun shall stay in this Arch more days, than in the former, and therefore he more slowly recedeth from the *Vertex* of the second place, than from the *Vertex* of the place taken in the Æquator.

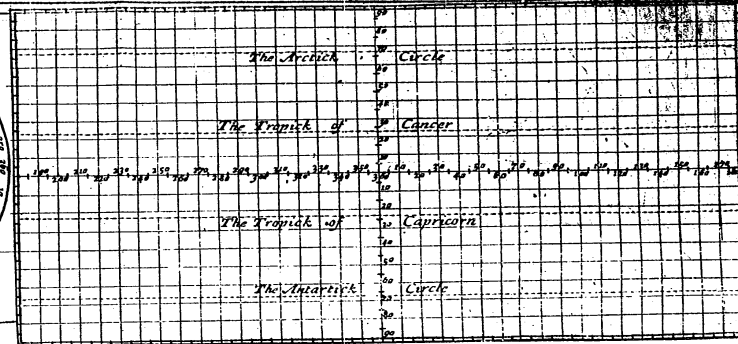
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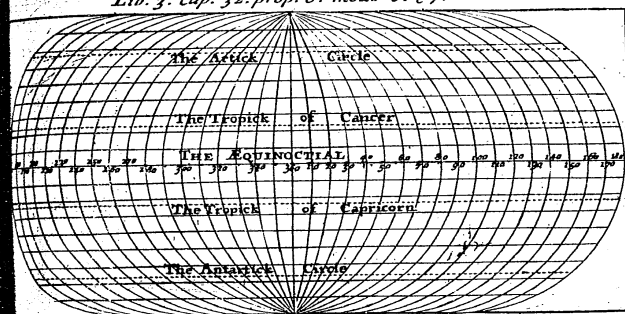
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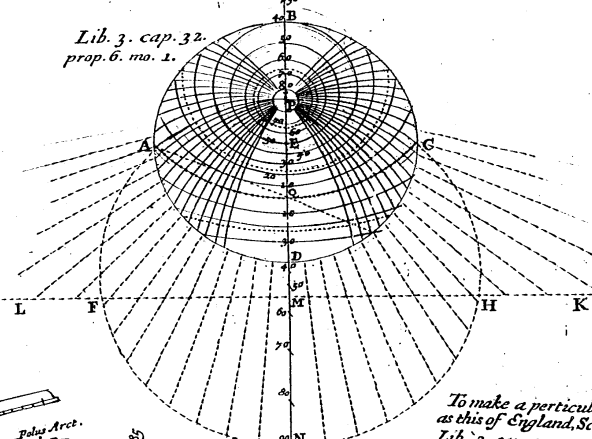
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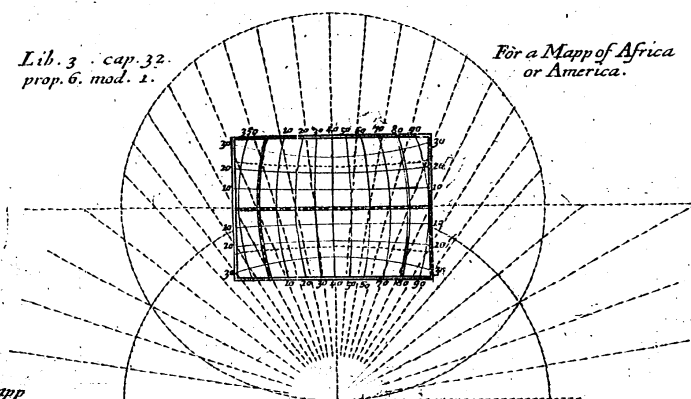


Lib. 3. cap. 32. prop. 6. modo 6. e 7.

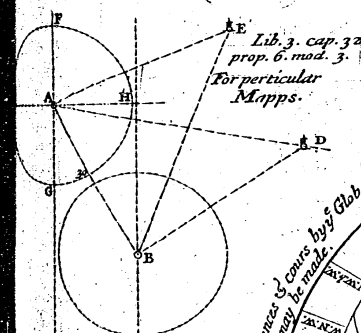


Lib. 3. cap. 32.
prop. 6. mo. 1.

Lib. 3. cap. 32.
prop. 6. mod. 1.



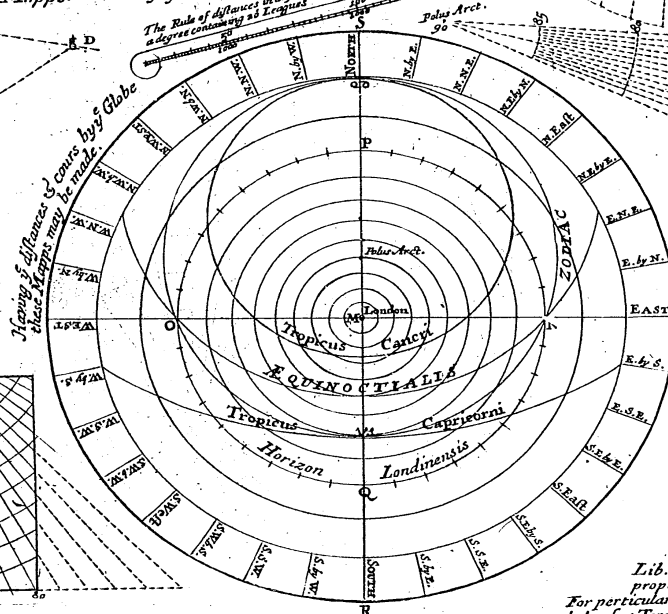
For a Mapp of Africa
or America.



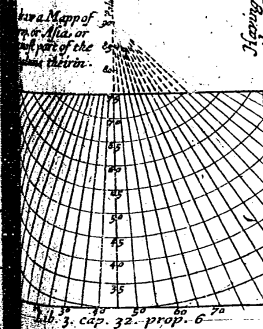
Lib. 3. cap. 32.
prop. 6. mod. 3.
For particular
Mapps.

Lib. 3. cap. 32. prop. 6. modo 4.
by 3^d Globe.

The Rule of distances in degrees
and degrees containing as follows

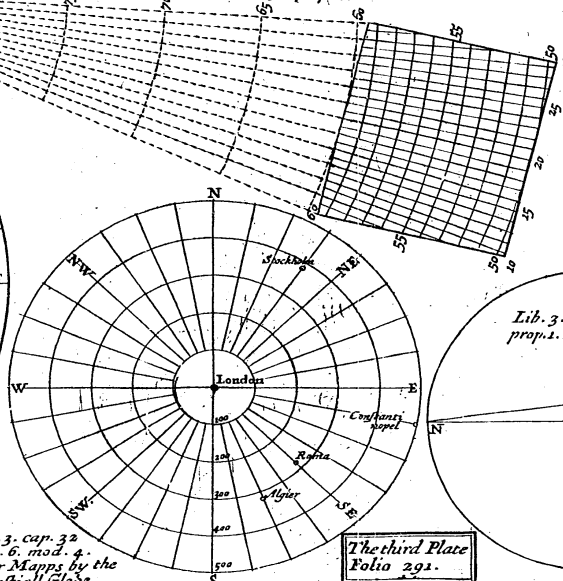


Having the distance & course by 3^d Globe
these Mapps may be made.

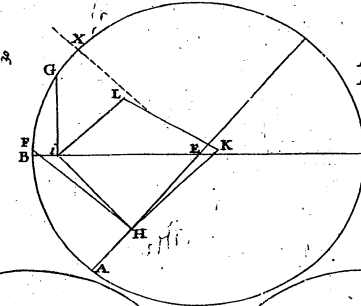


Lib. 3. cap. 32. prop. 6.

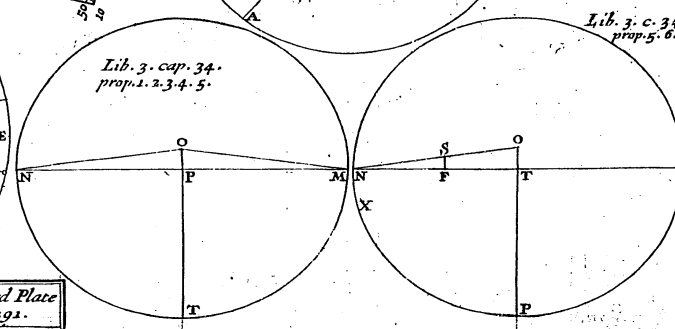
To make a particular Mapp
as this of England, Scotland & Ireland.
Lib. 3. cap. 32. prop. 6.



Lib. 3. cap. 32.
prop. 6. mod. 4.
For particular Mapps by the
help of a Terrestrial Globe.



Lib. 3. cap. 33
Prop. 9. Num. 7.



Lib. 3. cap. 34.
prop. 1. 2. 3. 4. 5.

Lib. 3. c. 34.
prop. 5. 6.



THE
THIRD BOOK
OF
General Geography,
TO WIT, THE
COMPARATIVE PART
Of the Affections from Comparing of Places.

CHAP. XXXI.

Of the Longitude of a place.

Definitions.



1. *THE Circle of the Longitude of any place in the Earth, is a Circle passing through that place, and both the Poles of the Earth. It is also termed the Meridian Circle, because the Meridian of a place, and the Circle of the Longitude of a place, are one and the same Circle. But they are only rationally distinguished, because the Meridian hath respect to the Motion of the Stars; the Circle of the Longitude, to the extension of the Earth; having no respect to the Celestial Motions. But the use of the term*

Meridian, is more frequent and convenient, and therefore we shall also use the word. They are conspicuous in Globes, and Maps, passing through every Ten Degrees of the Equator.

2. The

2. The distance of a place from a certain Meridian is termed the Longitude of a place, or else it is the Arch of the Equator, or Parallel intercepted between the Meridian of that place, and a certain other Meridian. This Meridian from which the Meridians of other places are reckoned, from West towards the East, is called the first Meridian. The Longitude of the Earth it self is termed its extension from West to East, conceived according to the Line of the Equator. The first Meridian in the Maps, and Globes, is notable above the rest for Magnitude, and Colour, and it is apparent to the eyes.

The distance of one place from another, is a very short Line intercepted between those two places in the Superficies of the Earth.

Any Point in the Globe and Maps, is truly said to represent and exhibit any place of the Earth, if that it hath that Situation and distance to the other points of the Maps, such as the place of the Earth, which it ought to represent, hath to the other places of the Earth, which are represented by the other Points of the Earth.

Proposition I.

Nature hath put no beginning or end to the dimension of the Earth, or of the extension from the West, to the East, or according to the Equator, but all and every one of the places may be taken for a beginning, and the first Meridian may be placed in them.

No beginning
or end of the
Dimension of
the Earth, &c.

For the better understanding of this, the matter must be more fully searched into, because that some, (I know not upon what account) suppose great mysteries to lie herein, that every Superficies, as well plane as crooked (as a Line by one, and a Body by three) is measured and terminated by two Dimensions, or extensions, as is evident from Principles of Geometry, and common use: of which extension one is termed the Longitude of the extension or figure, and the other the Latitude: and the one is conceived perpendicular to the other. Neither do these extensions differ in their nature, but that which we take for Longitude, may also be taken for Latitude, and so on the contrary: but yet for the most part, if these two extensions be unequal, we take the longest for Longitude, and the shortest for Latitude.

But in Ordinate Figures, as in the Equilateral Triangle, a Quadrant, and the like, the two extensions are equal; neither is there any difference between Longitude and Latitude. For the Figure of the Superficies of the Earth is Spherical, and Latitude doth not truly differ from Longitude, which we so conceive in it for the more distinct cognition. Now those two extensions in the Spherical Superficies are commodiously so conceived (as in other crooked Superficies,) if that first the Periphery of the Semicircle be taken in it, drawn from one point to the opposite point, and this Line be made one extension of the Superficies, then for the other extension you shall take another Periphery, cutting the former Periphery in the middle at Right Angles (for so Longitude and Latitude are taken in all Figures) and this must be conceived to extend about the whole Superficies, until it return to it self, that so a crooked Superficies may be supposed to be extended into a plane. Because therefore the first assumed Periphery, or extension, is only the Semicircle, that shall be the Latitude of the Globe; the latter, or other extension shall be the Longitude of the Globe, because it is longer than the former extension, as returning into it self, and being the Periphery of the whole Circle. Others render another cause of the Appellation; saying, that the lesser part of the Earth was known to the Ancients, from Pole to Pole; the greater from the East to the West.

Moreover in the Superficies of the Globe, we may take any Semiperiphery for the extension of Latitude, and his perpendicular for the extension of Longitude, and therefore we may do the same also on the Superficies of the Earth: but because it is better for memory, if the Peripheries be assumed, whose bounds, or else those Peripheries before the other Peripheries, which

Concerning
the Latitude
and Longitude
of the Earth,
and of places.

which have somewhat peculiar in the Superficies, therefore in the Superficies of the Earth for the extension of Latitude, some one Periphery is deservedly taken, drawn amongst the Poles of the Earth, and because no other Periphery is perpendicular to this Periphery, which may pass together through its Medium, except the Line of the Equator, therefore the Equator it self must be taken for the extension of the Longitude of the Earth.

So I think it is clearly explained, for what reason the Latitude of the Earth between the Poles is measured for Longitude by the assumed Line of the Equator. This Latitude and Longitude of the Earth must not be confounded with the Latitude and Longitude of places, or Points in the Earth, therefore they are expressed by the same terms, because the Latitude of places, or Points, is taken in the Periphery of the Latitude of the Earth it self, and is part of it: but the Longitude of places or Points is taken in the Periphery of the Longitude of the Earth, viz. in the Equator it self, and its Parallels.

Yet this is an improper acceptance of the terms, because Latitude and Longitude properly (as hath been said) only agreeeth to the Figures and Superficies: but a Point hath neither Latitude, nor Longitude; and therefore this different acceptance of the words, Latitude and Longitude, ought to be observed, because they are so frequently met with in the reading of Geographers, viz. the use and acceptance otherwise when we say the Latitude and Longitude of France, Spain, and the like. Because then the words are taken in their proper signification: for it is the Figure of France, or Spain, and so Longitude then signifieth the outmost or longest extension, but Latitude the shortest; which acceptance doth agree with that, wherein we said before that so much Latitude and so much Longitude must be assigned to the Superficies of the Earth. But the signification is otherwise, when we say, the Latitude or Longitude of this place, if by places we understand any Point, City, or Famous Place, because then, Latitude denoteth the distance of the place from the Equator; and the Longitude its distance from a certain Meridian. And indeed in my Judgment, for the avoyding of confusion, it were better to abstain from the use of these words, Longitude and Latitude, and to use these in their stead, the distance from the Equator, and the distance from the Meridian: but seeing that for so many Ages this hath been received, therefore it will be a hard matter to abolish it, wherefore in the following Discourse I shall also use the said terms, Latitude and Longitude.

The Authors
Judgment about the
words Latitude,
and Longitude.

Moreover the Latitude of a place, as the Latitude of the whole Earth, hath some noted Points of the Earth for the beginning of the Numeration, viz. the Poles and the Equator: but the Longitude of the Earth, because it is extended about the whole Earth, hath no certain beginning, or end, but the beginning and end is every where, because the Periphery is like to an infinite Line. Wherefore any Point of the Equator may be taken for the beginning of the Longitude of the Earth, and the Meridian passing through that Point, for the first Meridian, from whence the Meridians of all the Points of the Earth are numbered, or the Longitude of them Calculated.

Now why we require these two distances in every Point of the Earth, viz. one from the Equator, and the other from a certain Meridian, shall be shewed in the Third Proposition.

Proposition II.

To place and determinate the first Meridian, and the beginning of the Numeration for the Longitude of the places in the Globe of the Earth.

We have said in the preceeding Proposition that every Point of the Equator may be taken for the beginning of the extension of the Earth according to Longitude, and that from its Meridian the Longitudes of places must be reckoned, but because we cannot take all at once, it is better to fix one beginning, or to choose some certain Point, (but that is left to the choice of persons). Therefore Geographers have taken a certain place in the Superficies of the Earth, through which the first Meridian shall be drawn, and should shew in the Equator, where it cutteth it, this beginning of reckoning of the Longitude of places. But all have

See Proposition
on 1.

The Longitude
of places
where begun
by Ptolomy.

not taken the same place for the first Meridian, but divers. *Ptolomy* hath taken that near to the *Fortunate Islands*, which he removeth but only one *deg.* from the first, and hence towards the *Oriental quarter* through *Africa*, and *Asia*, he reckoneth the rest of the Meridians, and *Longitude* of places. For seeing it was less free to place a beginning, the Ancients chose rather to have an account of the places of the Earth, which they knew were inhabited, which portion doth not return into it self, as the Superficies of the Earth, and therefore in that portion or part a beginning of *Longitude* and end may be assigned in another Point. Because therefore in the time of *Ptolomy* the *Fortunate Isles*, where the ultimate ones, in the *Occidental Quarter* of all the Earth, or Lands then known: Therefore from that bound *Ptolomy* beginneth to reckon the *Longitude* of the Earth, and having gone forwards to the *Oriental Regions*, he maketh the end of his *Numeration* of the Meridians, in *Sina*, the ultimate Shoar of *Asia*.

But in process of time many *Regions* of the Earth were found to be Inhabited towards the *Occid.* and *America* was discovered, then some *Geographers* promoted the beginning of *Numeration* of *Longitude* towards the *Occid.* For some made the first Meridian at the *Ile* of *St. Nicholas*, adjacent to *Cape Verd* in *Africa*; but *Hondius* chose the *Ile* of *St. James* in his *Maps*.

The Longitude
of places where
begun by *Hondius*, *Mercator*,
and others.

Some chose the Meridian of one of the *Islands* of the *Azores*, which is called *Del Corvo* for the first Meridian, because that in this *Ile*, and the adjoining *Sea*, the *Magnetick Needle* is found to have no *Declination* from the Meridian Line, and that it sheweth the Northern and Southern *quarter*. *Mercator* hath observed the beginning also in his *Maps*.

But seeing that there are other places in the Earth, where the *Magnetick Needle* doth the same, neither doth it do it in all the Meridian of this place, therefore other *Geographers* have not thought that Cause sufficient: and some have placed the first Meridian in the *Brazilian Shore*: the more Modern, especially the *Hollanders* having gone back to the *Fortunate*, or *Canary Isles*, have chose in one of them called *Teneriffe*, a Mountain which is thought to be the highest in the whole World, called *El pico de Teneriffe*, and from the Meridian of this Mountain, they judge the *Numeration* of the *Longitude* of places ought to be begun, because they think fit that a Famous and durable place for all Ages may be best chosen for this purpose, concerning which in Ages to come, *Posterity* should not easily doubt, and moreover that that assignation of *Ptolomy*, which hath been observed for so many Ages, should not be deserted on a trivial account. The *French* at this day, from the Year 1634, observe that for the first Meridian which passeth through the *Occidental* part of the *Ile* of *Fer*, one of the *Canary Isles*. Which beginning *Lewis* the XIII King of *France*, commanded his *Mariners* and *Geographers* to observe.

The Longitude
by the *Hollanders*
begun at
Teneriffe.

The Longitude
by the
French begun at
the *Ile* of *Fer*,
in the *Canary*
Isles.

The Longitude
likewise
begun in sun-
dry places by
Astronomers.

Astronomers also take divers places for the first Meridian. For those who follow *Tycho*, are wont to place it at *Uranoburge*, situate in an *Island* in the *Danish Sea*, and at this place to compute their *Celestial motions*, and thence to other places. Others make other beginnings as they follow this or that Author of the *Ephemerides*. For the Writers of *Ephemerides*, as also the computers of the *Planetary Tables*, are wont to calculate the motions and appearances of the *Planets*, to the Meridians of their own Country, as *Origanus* to *Frankford*, *Magnus* to *Venice*, (because that *Padua* is an Academy of the *Venetians*). *Eccladius* to *Stetin*, *Lansbergius* to *Goefia* in *Zeland*, *Reinboldus* to *Regium* a Mountain of *Borussia*.

But to speak freely what I think, all this dissent of Authours proceedeth from no sufficient Cause, so that those who first removed the *Ptolomick* beginning out of its place are blame worthy. But it is all one, whatsoever beginning of this account is taken in the Earth, whether the place be noted, or the ultimate to the *Occident*, or *Orient*, so that the situation, and distance of the other places be accurately known at it. Yet this variety of the beginning of the Meridians, expresseth the reading of *Geographical Writers* with many confusions and difficulties. Yet because the knowledge of the *Declination* of the *Loadstone*, is of great utility, and that that *Declination* encreaseth

eth even to a certain *Meridian*, and then again decreaseth, I think it not altogether inconvenient for the observation of the *Declination* of the *Loadstone*, and the more easy comparison of the increase or decrease of it, if that that be taken for the first *Meridian*, in which the *Magnetick Needle* maketh little or no *Declination*, so that such a *Meridian* might be given, viz. in all the places of which, or the most at least, the *Magnetick Needle* would do it.

But seeing that the *Hollanders* at this time take the Mountain of *Teneriffe*, for the beginning of their *Longitude*, and that they Sail at this day into all parts of the World, therefore it is convenient to acknowledge the same beginning with them for the better understanding of the *Diaries* that they are wont to publish.

Now you must know that the Reading of Authours, where mention is made of the *Longitude* of a Place, or of a certain numbered *Meridian*, that then you ought to consider, what beginning of *Longitude* that Author determineth, or through what place he bringeth his first *Meridian*, (as you are to observe that the *Maps* which are used in the Second Part of this Book, being the *Geographical Description* of the parts and places of the Four Parts of the World, the *Longitude* I say of those places, are taken according to the *French Account*, beginning at the *Ile* of *Fer*, being one of the *Canary Isles*, they being composed by Monsieur *Sanfon*, *Geographer* to the King of *France*, and whose Method is not convenient to be allowed), for so that the *Longitude* of other places must be brought and inquired of.

Proposition III.

The Latitude and Longitude of any place, or the distance of any place from the Equator, or a certain Meridian being given, which is found in the Maps, or Globes, to exhibit the situation and Point of that place on the Maps, or Globes. Or thus, If that we be in any place of the World (whether at Land or Sea) which is unknown unto us, or whose situation we are ignorant of, to the other parts of the Earth, so that if we can find the Latitude and Longitude of this place, thence to find out the situation of this place in the Earth, and its distance from other places.

This is that Problem for which a Method is sought so anxiously, and with so great industry, by which the *Longitude* of a place at any time in which we are in it may be found, and therefore although we should first treat of the invention of this *Longitude*, yet I thought it fitter to premise the Problem itself, for which that *Longitude* is sought for, and that for this reason, seeing that we must treat largely of this *Longitude*, least you should be cloyed, not knowing to what end so great a labour is undertaken, and so many various ways tried.

For *Mariners* having Sailed far from the Shoar, and being in the Ocean, because they cannot accurately know the way of their Voyage made, by reason of the divers hindrances, and note it in their *Maps*, are often ignorant in what place of the Earth they are, what situation this place hath to those places whither they go, or what places are to be gone to, if that they will avoid danger, and therefore also they are ignorant unto what quarter they must direct their course. Unto the knowledge of which there is no more ready a Method, than for to certainly find the *Longitude*, and *Latitude* of the place, that is, its distance from the *Equator*, and some certain *Meridian* of the Earth. And *Mathematicians* have taught them, with no great difficulty by divers ways to find out the *Latitude* of a place in the day by the *Sun*, and in the night by the *Stars*. Such Modes we have shewed before, (for those who think to know it only by the help of the *Compass*, sufficiently discovered their ignorance;) from which *Latitude* being found, they know in what Parallel of the Earth they are, which indeed is no small part of the demand. But seeing that the Points of the Parallel are infinite, they do not yet know from the knowledge of this *Latitude* in what Point of the Parallel they are: this they would

The Longitude and Latitude of places, of great importance to Mariners to know.

tain, if that they knew in what Meridian they were, or how many *degrees* this Meridian is distant from some Meridian of other places. For this Meridian cutteth the Parallel before found, that Point is the place wherein they are. For so it is observed in all *Mathematical Disciplines*, that when it is demanded concerning the place of any Point, that for the most part is no otherwise found than by the Section of two *Lines*.

Therefore let the *Latitude or Longitude of any place, or Point situated in the Superficies of the Earth be known, the situation of the place or Point will be found thus in the Globe.*

Let the *deg. of Latitude* from the *Aequator* be numbred in the *Brazen Meridian*, and at the term of the *Numeration*, let the Parallel of the place, or Circle of *Latitude*, be described by a Chalk applyed. Thus it is certain from the found out *Latitude*, that we are in some Point of it, or that some Point of it is that which is sought for. And this Point moreover is known from the found out *Longitude*, for let the Meridian or place, from which that *Longitude* is reckoned be brought under the *Brazen Meridian* (if that the Meridian pass through the beginning of this *Numeration*, or if the first Meridian of the Globe be that beginning, then it is not necessary to bring it to the *Brazen Meridian*) and let the *deg. of the known Longitude*, be numbred in the *Aequator* for that Point, which is in the Meridian, towards the West, or East, as the *Longitude* is given. Let the term of the *Numeration* be brought to the *Brazen Meridian* (except some Meridian pass through it) so this Meridian shall represent the Meridian in which the Point sought, or place unknown is necessarily situated. And the Parallel is before found, in which the same demanded Point hath been shown to be situated. Wherefore the sought place is that Point where the found out Meridian, and the before found out Parallel mutually cut one another, *viz.* that Point of the Parallel which is discovered under the *Brazen Meridian*: The practice is easy after this Mode.

Let the *degrees of the given Longitude* be numbred in the *Aequator*, from that Point which is the beginning of the given *Longitude*: Let the term of the *Numeration be brought to the Brazen Meridian*, and let the *Degrees of the Latitude given be reckoned from the Aequator in the Meridian*. The term of this *Numeration is the place sought, or the term of the Point, in which the place unknown lyeth.*

It is thus shewed on *Maps*, consisting of *streight Lines*, as all *Mariners Maps* are: the *degrees of Latitude* are reckoned in the *Lines* descending, or side *Lines*, and the Rule being applyed, the Parallel of the place is drawn, in which it is certain that the unknown place lyeth. Then in the *transverse lines* above and beneath, the *Longitude* is reckoned, and the Rule being applyed, the Meridian Line is drawn, where this cutteth the former, that is the Point of the place sought for. But more expeditiously thus: the Rule being applyed to the *degrees of Longitude* given in the *transverse lines*, then one or other part is taken from the interval of the *Compass* in the *Lateral line*, which lyeth between the given *degree of Latitude*, and the upper or lower Point, and this interval or space of the *Compass* being fitted to the Rule, presently you have the place of the Point sought for in the *Map*. Therefore the situation of this is beheld at once in all places; hence it is easy to gather unto what *quarter* the Ship must Sail, and direct her Course, if that they intend to arrive at this or that place.

We act after the same Mode in *Maps of Crooked Lines*, except only that we are forced to draw *Crooked lines* in *streight lines*. This is the principal use of the found out *Latitude of the Mariners Art*.

The second and greatest use, is the making of *Globes* and *Maps*, because after the same Mode in which we have shewed by *Longitude*, and *Latitude* known, all the places are made in the *Globes* and *Maps*, as shall be shewed in the following *Proposition*. For it would be impossible to make a *Terrestrial Globe*, except the *Longitude* of places had been found out and known. And thence it cometh to pass, that *Globes*, and *Maps*, may attribute many places to a false place, because their true *Latitude* was not known.

The

Mariners make use of Maps or Charts consisting of streight Lines.

Of Maps of Crooked Lines.

The third use of the known *Latitude* of places is also notable, *viz.* that by that we easily know the variety of times in divers places, and in what hour, or in what part of an hour every one of the *Celestial Phenomena's* are beheld in divers Regions, of which I shall speak in the next *Proposition*.

The fourth use, is that from the difference of the *Longitude* of two places, and *Latitude*, the distance of places is found. Now we come to the Method of finding of it.

Proposition IV.

The Sun, Stars, and all the Points conceived in the Heaven (as the Points of the *Aequator*, and *Parallels*) are every hour removed, or recede 15 degrees from the Meridian of any place, in one scruple of an hour, they are removed 15 minutes, and so in 4 scruples of an hour they recede one degree, *viz.* the distance being taken in the Parallel of any Star.

An hour is the 24th part of time, in which the Sun being carried from the Meridian of any place, to the Occident through the lower Heaven, and the Oriental Horizon, returneth to the Meridian again, that is, he is circumvolv'd through an whole *Periphery*. Now a *Periphery* is accounted by 360, and if you divide 360 by 24, you shall find that 15 degrees do answer to one hour. Therefore the Sun in one hour is removed 15 deg. from the Meridian of any place, all the Stars also are found at the same time to be wheeled round with the Sun, through an whole *Periphery* to the Meridian: Wherefore they also depart from the Meridian every hour 15 deg. and in 4 scruples of an hour one deg.

This may be shewed or demonstrated on the Globe: For let any Point of the *Aequator* be noted, and that being brought to the Meridian, let the Index be placed at the 12th hour of the Circle. Then let the Globe be turned until the Index shew the first hour, and you shall find that the noted Point of the *Aequator*, hath departed 15 deg. from the Meridian, or as we commonly say, the Meridian hath passed 15 deg. of the *Aequator*: if you then again turn the Globe until the Index shew the 2d, 3d, or 4th hour, you shall find in every noted hour, that the Point hath departed from the Meridian 15 degrees. After the same Mode we shall find the same in any Parallel, which the Sun and Stars do describe by a Diurnal Motion without the *Aequator*.

The Sun, Stars, and all the Points conceived in the Heavens, are every hour removed 15 degrees from the Meridian of any place.

Proposition V.

The given hours being given at one and the same time, or at one and the same Celestial appearance, as also the Hourly minutes of our place, and that of the other place; to find out how many degrees the Meridian of our place is distant from the Meridian of the other place, that is to find the Longitude of our place from that place.

The solution is easy from what hath been said already, by reason that it hath been shewed, that if one place anticipateth one hour of the account of the other place, the Meridian of that is more Oriental than the Meridian of this, by 15 degrees; if two hours by 30 degrees; if three hours by 45 degrees.

Let therefore the difference of the given hours, be changed into the degrees, and Minutes of the *Aequator*, *viz.* reckoning for every hour 15 degrees; for 1 of an hour, 3 degrees, 45 Minutes; for one scruple of an hour 1 degree. The found out degrees and Minutes, will shew the distance of the Meridians, *viz.* if that the hours of our place be more than the hours of the other place, our Meridian shall be situated towards the East from the other; if fewer, towards the West.

Pro-

Proposition. VI.

Again hours and scruples of hours of divers places being given at one and the same time; or at the time of one and the same Celestial appearance, and one place, or one Meridian of one place being given in the Maps, or Globes, to exhibit also the Meridian or Longitude of another place on the Globe or Maps.

Let the difference of hours, and scruples of hours be changed into the Degrees and Minutes of the *Æquator*. Then consider, whether the hours of this place, whose Meridian is given on the Globe, and the Maps be fewer or more than that of the other place, whose Meridian is sought for. If fewer, this other Meridian shall be situated from the given Meridian, towards the East; if more towards the West. Let it be brought to the *Brazen Meridian* (except some other Meridian pass through it) and let the Degrees and Minutes found from the difference of the hours be numbred from the Point of the *Æquator*, together being in the Meridian, and that towards the West, or East, as we collect the situation of the other place (it is more easily done by the *Horary Index* applied to 12, and the Globe being turned round until the Index shew the difference of the hours). Let the term of the account be noted with Chalk, and brought under the Meridian: so this *Brazen Meridian* shall be the Meridian sought, and the Point of the *Æquator* shall shew its Longitude.

In Maps let the same Degrees and Minutes be numbred from the given Meridian in *transverse lines* above and below, and the Rule being applied, let the Line be drawn (for in *right lined* Maps, as such as those of *Mariners*, is the chief of this *Problem*) this Line shall be the sought for Meridian.

Proposition. VII.

To find the Longitude of an unknown place, in which we are, or to find the distance of the Meridian in which we are, from some known Meridian, or whose situation or may be expressed on the Maps, or Globes.

This is that *Problem* whose solution *Seamen* so much expect from the *Mathematicians*, which would render the Art of Navigation almost perfect, and subject to no Error, which hath exercised for this two Ages the wits of so many great persons, for the resolving of which, the *English*, *French*, *Dutch*, have every one appointed a donative of 50000 *Florens* to him who shall exhibit a resolution: the *Dutch* and *German* *Mariners* are wont sometimes to expound the *Problem* according to the *Latine phrase*: but sometimes they use another, as if you should say, to seek the *Oriental* and *Occidental quarter*, which phrase is very void of the matter; so that it is manifest what a power the *Vulgar* have taken in introducing new phrases, though very improper. For by this phrase it cometh to pass that persons unskilful in *Geography*, and *Navigation*, are ignorant what the *Mariners* mean, when they speak of finding out the East, and West: for most think, that they seek what the words import, viz. the Eastern and Western quarter, which yet is false and unworthy the demand. For they know these quarters when they are in any place of the Sea, by the benefit of the same *Magnetick Needle*, which sheweth the North and South. Because in the *Mariners* *Compass* all the quarters are noted, and without the *Compass* the *Plaga* of the North and South, being known, it is most easy to shew the quarter of the East, and West; for the face being turned towards the North, the East is on the right hand, the West on the left; on the contrary, the face being turned towards the South, the East is on the left hand, and the West on the right. But this is not the demand, but the Longitude of the place is that required; that is, how much in the Arch of the *Æquator* the Meridian of this place is removed towards the West, or East, from any certain Meridian. But why, may some say, do *Mariners* assume so

improper a phrase? The reason is, that the *Vulgar* do conceive almost all things confusedly, and only superficially, and from a small similitude with other things impose Names and Phrases, as is manifest from the appellation of *America*, which they vulgarly term the West Indies, because that after the discovery of *India* (properly so called) that was also found. This might be instanced by many more Examples, and so it is with this phrase, to seek the East and West. But seeing that this *Problem* to find out the North and South, is resolved by the *Magnetick Needle*, and also the *Problem* of finding out the Longitude of a place is of very great Moment, and *Mariners* desire to have as easy a Method to know the same, as that of the Latitude of a place, and moreover that Longitude is reckoned from the West, to the East in the *Æquator*; therefore by reason of this slight similitude, and account, they have taken up this phrase, to find the East and West, when here no quarter is sought for, but only the distance of the Meridians. This is convenient to explain, by reason that many were brought into an Error, and false Conception of the same, or at least were ignorant, what was signified by the phrase.

It is easy as is shewed aforesaid, from the difference of hours, to shew, or find out the Longitude of one place from another. Therefore in *Calendars*, and *Ephemerides*, (by the signal Benefit, and liberality of *Astronomy*) we have set down for every day and hour, all the *Phænomena* of any place, and the Motions of the *Planets*, as the beginning, the middle, the end of an *Eclipse*; also the Conjunction of the Moon with other *Planets*, her entrance into the *Ecliptick*. Therefore being in the place of an unknown Longitude, if we enquire the hour in which we behold the same *Phænomena* in this place, we shall thence find the difference of our hour, from the hour of that place unto which the *Tables* are Calculated; and hence moreover the distance of the Meridian from the Meridian in which we are, or whose hours the *Table* sheweth, and so we have the demanded Longitude of the place. Neither doth the difficulty consist in the finding of the hour, and *Horary* scruples, for they are easily known from the quarter or *Altitude* of the Sun or Stars, but the difficulty is in the defect of such *Celestial appearances*, which may be so observed.

Now although there be also other Modes, by which without the knowledge of the hours, and consideration of the *Planetary motions*, the Longitude of a place may be inquired, yet they have no place here, by reason that they do not first shew the Longitude, but the place it self, and require other things which are equally unknown in those cases with the Longitude, which Modes we shall explain in the following discourse. But now we seek such Modes, in which that Longitude of the place may be found, where the situation of the place is unknown. All which Modes presuppose a knowledge and comparison of the time in which any appearance of the *Planetary motion* is beheld in divers places. But those Motions are unfit for this business which are very slow, so that in many hours none, or little difference is found in the place of those *Planets*. For Example, *Saturn* maketh his Progress in the *Ecliptick*, in the space of one hour. Therefore although from the *Ephemerides* we may have the time, and the hour which is in that place when that *Saturn* is in the *Ecliptick*, yet because that he moveth very slowly, thence it cometh to pass, that if you observe, he seemeth to stay many hours in the same place, and therefore that Moment of the hour cannot be known in the place where we are, seeing that they stay in the very minute, and therefore they cannot also compare the hour of our place, with the hour of the place of the *Tables*.

So the Sun goeth forwards every hour in the *Ecliptick* about 2½ first minutes, (because in an whole day it goeth forwards about one degree) which Motion is over slow for this business, by reason that although observations may be very accurately made at the beginning and end of the hour, yet the same place of the Sun shall be found, and therefore the Error of two or three hours may easily happen. For you must know, that the Modes ought to be such that in the very search of the 15th part of an hour, an error may

Further concerning the Longitude of places.

Of the finding out of the Longitude of an unknown place in which we are.

Longitude reckoned from the West to the East in the *Æquator*.

The Motion of the Sun in the *Ecliptick*.

may be avoyded, that is, that that *Celestial Phenomenon* which is made use of for the finding of the same, may sensibly be varied within two *scruples* of an hour; for if at or between two *scruples* of an hour, it remaineth altogether the same both as to sense and diligent observation, we cannot be certain of that part of an hour, in which that happeneth truly in the Heaven, and if we err two *scruples* of an hour in the observation, then an error of half a *degree* will slip into the *Longitude*; so that we will suppose that our Meridian in which we are, and note it in the *Maps*, and *Globes*, which is not the true one, but removed from the true one in the *Aequator* half a *deg.* Therefore they are such *Phenomenons* of the *Planets*, which within two *scruples* of an hour, or else at one *scruple*, or if possible, at half a *scruple* may be varied. But of such there are none but these. 1. The beginning of the *Eclipse* of the Moon, the middle, and the end. 2. The *Longitude*, or place of the Moon in the *Zodiack*. 3. The distance of the Moon from the fixed *Stars*, or her appulse towards them. 4. The ingress of the Moon into the *Ecliptick*, or into the Points of her Circle, where this cutteth the *Ecliptick*; And 5. The *Conjunction*, *Distance*, and *Eclipses* of the *Jovial Planets*, viz. of those Four *Planets* which are found in this our Age, to make a Circuit about *Jupiter*. Whence the *Copernican Hypothesis* hath obtained a great deal of Confirmation.

The first Mode by the Eclipse of the Moon.

Of the Eclipse of the Moon. First Mode.

This Mode is very accurate if that their could happen but *Eclipses* every night. At the time wherein we behold the beginning or end of the *Lunary Eclipse* by the help of the *Telescope*, then I say, let the *Altitude*, or *Plaga* of any fixed *Star* be observed, and also let the Elevation of the *Pole* be before found out, or let it together be sought for from some *Star* in the Meridian. From the *Altitude* of the *Star*, the hour with the *scruples*, is accurately enough found, as we shall shew from *Astronomy*, and more easily without the invention of *Altitude*, if the *Star* be in the Meridian. Let this hour so found out with the *scruples*, be compared with the hour and *scruples* in which the *Ephemerides* exhibit the beginning of the *Eclipse*, or the middle, (which hours respect the Meridian, unto which the *Ephemerides* are Calculated) for so the hour of two places is found at the same time, or at the same *Celestial appearance*, viz. the hour of our place, and of the Meridian of the *Ephemerides*: and the Meridian of the *Ephemerides* is known. Therefore we shall find the *Longitude* of our place from the Meridian of the *Ephemerides*, if we change the difference of the hours of both places into the *degrees* and *Minutes* of the *Aequator*, as we have said in the V. *Proposition*. And because in *Maps* given, and in the *Globe*, the given Meridian of the *Ephemerides* is known, or may be shewed with little labour, therefore we must reckon the *degrees* found out from it in the *transverse lines* of the *Maps*, towards the West, or East, as the hour of our place, or of the place unknown shall be more, or fewer than the hours of the Meridian of the *Ephemerides* and the Meridian Line shall be brought through the term of the *Numeration*. That is the Meridian of the place in which we then are, or in which the observation of the *Ecliptick* was made.

The second Mode by the place of the Moon in the Zodiack.

The second Mode.

Although the preceeding Mode, by the *Eclipse* of the Moon performing the business, be most accurate, yet because those *Eclipses* are very rare, neither are all conspicuous in all places, therefore this Mode doth not resolve the business sufficiently, neither can it help the *Mariners* in the wide *Ocean*, but it is more convenient to the constituting and finding out the hours of the *Terrestrial places*, where *Mathematicians* are, or may go, and the *Longitudes* of almost all places which we know are found out by this Mode. For from the noted comparison of the time, in which the beginning, or middle of the *Eclipse* was discovered, it is easy to find out the *Longitude* of one place from another, as I think is sufficiently explained. But the use of *Mariners* requireth

reth a *Phenomenon* or appearance, viz. which may happen every night at the least (if not in the days) because it can happen in every night, so that they may be in an unknown place, as deceived by *Tempests*. But the more frequent *Phenomenon* is the place of the Moon in the *Zodiack*, but a very troublesome observation is required by reason of two old *Parallaxes*, so that you can hardly avoid a small error, if at least a great one of half, or an whole hour be shunned, whence a false Meridian is found removed from a true many miles; viz. a hundred and more. Yet you will be subject to the lesser error, if that you expect the moment of the hour in which the Moon is in the Meridian: for then the place is accurately enough found after this Mode. When you have observed that the Moon is come into the Meridian of the place where you are, then you must presently take the noted *Altitude* of some *Star*, and from this, and the Elevation of the *Pole*, you may enquire the hour: but it is better to do it by some *Star* then in the Meridian, as we shall hereafter shew. Moreover from the known hour is found what Point of the *Ecliptick*, or *Zodiack*, is then in the Meridian, or that possesseth the middle of Heaven (as *Astronomers* speak) which also is easy as we shall shew anon. So at the hour of our place, or of the unknown place, we shall have the known place of the Moon in the *Zodiack*. Then from the *Tables* of the *Ephemerides* let the hour be found, which is in the Meridian of the *Ephemerides*, where the *Sun* is in the place of the *Zodiack*, which is taught in the Introduction of the *Ephemerides*, neither is it difficult. And so again we shall have the hours of two places at the same time, viz. of the place in which we are, whose *Longitude* is unknown, and of the place, unto whose Meridian the *Ephemerides* are Calculated, and whose situation is in *Maps* and *Globes*. Wherefore from the difference of time the *Longitude* of our place sought for shall be found, as is sufficiently demonstrated in the preceeding Mode.

It is presupposed that the Elevation of the Pole is before found.

The third Mode, by the distance of the Moon from some fixed Star.

By reason that we cannot observe the Moon in the Meridian many nights, viz. when she is not much removed from the *sun*, after and before the New Moon, and therefore this appearance is not so frequent as the *Mariners* use requireth, Therefore some do consider another *Phenomenon* in the motion of the Moon, which is more frequent, and from thence the Mode in finding out the *Longitude* is delivered, viz. the drawing near, and departing of the Moon from the fixed *Stars*; for from thence the true place of the Moon may be observed at the given moment of the observation. But the Calculation is so difficult by reason of the *Parallaxes*, and the solution of the *Oblique Spherical Triangles*, and other hazards, that it can neither serve *Mariners*, nor will I burden you with its Precepts, but rather omit it. For it requireth a *Genius* most expert in Calculation.

The third Mode of the Moon.

The fourth Mode by the entrance of the Moon into the Ecliptick.

The path of the Moon cutteth the *Ecliptick* in two points, in which when it cometh by its own proper motion, she is then in the *Ecliptick*, but at other times it is moved out of it by a great departure of 5 *degrees*. Therefore you must observe exactly the time in the place of the unknown *Longitude*, in which the Moon toucheth the *Ecliptick*. Moreover from the *Ephemerides*, let the hour be taken at the Meridian of the *Ephemerides*, in which that entrance is made. Then from the comparison of our time, or of the place unknown, with the time of the Meridian of the *Ephemerides*, you have the difference of time, whence the *Longitude* of the place, which is ours may be found from the Meridian of the *Ephemerides*. But this Mode also by reason of the difficult practice is to be esteemed useless. For the entrance of the Moon into the *Ecliptick* is difficult to be observed, and the Calculation is very intricate, and subject to error.

The fourth Mode of the Moon.

The fifth Mode by the Jovial Planets.

The fifth
Mode by the
Jovial Planets.

Many judge this *Phænomenon* to be preferred before the *Phænomenons* of the Moon in this affair, because that these *Jovial* attendants are not subject to *Parallaxes*; and moreover in every situation of *Jupiter* above the Horizon, afford a commodious observation. There are four *Planets*, the invention of the Great *Galileus*, which move about *Jupiter*, as about the Center of their Lord, so small that they cannot be discerned by a free sight, but only by the help of a *Telescope*. Their Motion (*viz.* that proper to them, by which they move about *Jupiter*, for they have a Diurnal Motion common with all the *Stars*, (a Motion common in the *Ecliptick* with *Jupiter*, and the other *Planets*) is very swift. For he that is next to *Jupiter*, absolveth his course in one day with 18 $\frac{1}{2}$ hours; the second in 3 days, with 12 $\frac{1}{2}$ hours; the third in 7 days, and 2 hours; the fourth and last in 16 days with 18 hours. The progress of their Motion must be Calculated at every hour, and therefore it is not found in the common *Ephemerides*; but you have their *Ephemerides* in other Books. Therefore if we desire by the help of their Motions to find the Longitude of a place, we must make use of a most perfect *Astroscope*, and in the night turning it to *Jupiter* (if he be above the Horizon of that place) to observe the Conjunction of these two *Planets*, or the Conjunction with *Jupiter*, or the like appearance, and at that moment of time to find also the hour of the place from the Meridian situation or *Altitude* of any *Star*. Then the *Ephemerides* of these Companions of *Jupiter* must be consulted, and the hour, and scruples of hours thence taken, in which such a Conjunction is in the Meridian, unto which those *Ephemerides* are computed. And so again we shall have the hour of the two places at the time of one and the same *Phænomenon*. Whence from the difference of the hours, if it be turned into *degrees*, we shall find the Longitude of our place from the Meridian of the *Ephemerides* which is known.

The sixth Mode by an Automatical, or moving Dial, or Horologe.

The sixth
Mode by a
moving Dial.

By reason that all the Modes in which by the *Celestial Phenomena* we have shewed to find the Longitude of places are in this respect defective, that they do not appear every night (for it is known concerning the Moon, as also with the attendants of *Jupiter*, that they rise and set with the *Sun* near to *Jupiter*) and moreover that they have a great difficulty of observing in the Ships, joynd or accompanied with the flowing of waves; for this reason many leaving the appearances of the Moon, and the attendance of *Jupiter*, fly to the *Automatical Horologe*, and advise the *Mechanical Artificers*, so to endeavour to prepare a *Machine*, or *Horologe* as may be subject to no error, so that it may shew 24 hours at the same time, in which the *Sun* may be circinvolved, and may make one day, or 24 hours, and may neither *Anticipate* or postdate the time.

A moving Dial
very useful for
the finding the
Longitudes of
places.

If that such an *Automaton* could be made, it would be very apt and afford a most facile invention of Longitude to Navigators. For before that they set Sail from any place, the hour of that place must be observed accurately at some time (which is no difficult matter) and the *Automaton* was to be disposed at that hour, and so in every day it will shew the hours of this place, if that it be subject to no fault. When therefore that place being left, it came to another whose Longitude or distance of the Meridian, from the Meridian of the place of the departure, we desire to know, nothing remaineth to be done, but that we should observe in this place the hour from Heaven (which in the day time is done by the *Sun*, in the night by the *Stars* without much labour) of this place, and also looking on the *Automaton* what hour then is in the place, or Meridian whence we departed. So we shall have the hours of two places at the same moment of time. And therefore that difference of hours, if that it be changed into *degrees* and Minutes, as hath been said

is already, it will shew the Longitude of this place, from the Meridian of our place whence we departed; and so the *degrees* in the Maps or Globes being numbered from this Meridian whence we departed, they will shew the Meridian where we are.

But notwithstanding *Artificers* have hitherto shewed great industry in the making of an *Automaton* of such perfection, yet none hath been so happy to accomplish the same. For both the condition of the matter whence they are made lacks such a perfection, and the diversity of the *Air* taketh away the perpetual equality of the motion. For when the *Air* is cold, it moves more slowly than when the *Air* is warm; so that the *Automaton* which the *Hollanders* placed in their Houses, when they lived a whole Winter in *Nova Zembla*, ceased wholly from motion, although that they added more weight to it than was usual. Now for the correcting this defect in these *Automatical Horologies*, or *Clocks*, they advise us every day to place the *Horologe* at the hour of that place in which, or unto which they then are come, but although this be done, yet a great error may creep into the invention of Longitude.

The Automatical
Horologe
subject to Error.

For if on the second day of our going forth, the Longitude of this place, or Meridian may be found out from the hours of the *Automaton*, compared with the hours of the place unto which we are come, and the hours of the *Automaton* do not altogether exactly agree with the hours of the place whence we set Sail, thence it will come to pass that a defective Longitude may be taken, and a false Meridian noted in the Maps for the place of the Ship that day. In the following day, *viz.* on the third day, a false Longitude shall again be found, and that being numbered from the false Meridian of the preceding day, shall duplicate the error. On the fourth day again it shall be augmented, and the defect shall be triplicated. On the fifth day it shall be four times worse, and so on. For Example, if that an *Horologe* in the space of 24 hours prove defective in the *Celestial motion* and *revolution* for the 15th part of an hour, (which perfection our *Artificers* do seldom exceed) the Longitude found from it shall be greater or lesser than an whole degree (for $\frac{1}{15}$ of an hour, maketh a degree) and so a false Meridian of this day shall be noted in the Maps, which is distant from the true a degree, or 15 Miles. And on the third day, by reason that the *Automaton* erreth again the 15th part of an hour, here again will be the defect of one degree of Longitude, and seeing that the noted Meridian of the former day is also absent one degree from the Meridian, which is true, and from thence the Numeration is made for the Meridian of the third day, here now will be a Meridian removed two degrees, that is thirty Miles in the *Equator*; on the fourth day three degrees, on the fifth day four degrees, that is sixty Miles, so that at length the numerated Longitude, and the noted Meridian will be far from the Meridian in which the Ship then is. And this is the Cause why this Mode is not perfect, and is therefore neglected by *Mariners*.

Lemma.

Because that in all the preceeding Modes of finding out of a Longitude, the hour was to be sought for at the time of observation, therefore we shall explain the same Mode from the Principles of *Astronomy*, by which it is done (for concerning the Elevation of the Pole, which also is required, we have spoken in the 23 Chapter). In the day time the *Sun* must be observed, in the night the most remarkable *Stars*. At both times it is best to expect the time in which the *Sun* or *Stars* are in the Meridian, and for the knowing the hours and *Horary* scruples of the other remaining part of time, a most exact *Automaton* must be used. For an *Automaton* will little err above the space of half a day if it be exactly made, and so we shall have no need of the Elevation of the Pole in this case, which yet we ought to know by reason of the Parallel.

See Chap. 23

Concerning the day therefore, the *Sun* being brought into the Meridian, we know the 12 hour to be in the place, and therefore the *Automaton* must be plac-

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sed

ced at this very moment of time to shew the hours of the following time. But if the *Phænomenon* must be observed before the *Meridies*, let the *Automaton* be disposed at the very time of the observation, and then let the appulse of the *Sun* at the *Meridian* be observed, and then looking on the *Automaton* the hours may be known, which are elapsed from the time of the observation to the *Meridies*, or 12th hour, whence the hour of the observation shall be known.

But if when the *Sun* is without the *Meridian*, you desire to know the hour from the *Heaven*, let the *Altitude* of the *Sun* be taken at the time of the *Phænomenon*, or appearance. Then on the *Spherical Triangle*, from three given sides, which are the *Complement* of the *Elevation* of the *Pole* (or the distance of the place from the *Pole*), the *Complement* of the *Declination* of the *Sun* to that day, and the *Complement* of the observed *Altitude* of the *Sun*, from these three sides, I say, of the *Spherical Triangle*, let any *Angle* be found out: in this that must be found which is comprehended from the *Complements* of the *Declination* and *Elevation* of the *Pole*, or that which is opposed to the *Complement* of the *Altitude* of the *Sun*, which how it may be done, let those that are studious search from the *Doctrine of Trigonometry*. How the hour may be found by the *Globe* from the *Altitude* of the *Sun* at any time, we have shewed in the 29 *Chap.* and the 3d. *Prop.* which may satisfy most *Students* in *Geography*, when they do not so much as demand an exact part of an hour, but in *Navigation* it must be Calculated, except some, who resolve it by a *Catholick Planisphere*, but I fear over much defect in *Horary* scruples. In the night time the *Stars* must be applied, as hath been said, and because, for the most part, one or other of them may be had in the *Meridian*; therefore there is no necessity to exhibit another without the *Meridian*, but it is best to Elect one in the *Meridian*, or to expect it at the time, in which some *Star* nigh to the *Meridian* cometh unto it. Then assume, from the *Astronomical Tables*, the direct *Ascension* of that *Star*, and also the direct *Ascension* of the *Sun* of that Point of the *Ecliptick*, in which the *Sun* is on that day. And if the direct *Ascension* of the *Sun* shall be lesser, let it be subtracted from the *Ascension* of the *Star*, if greater, let his *Complement* be taken at 360 degrees, and let this be added to the *Ascension* of the *Star*. Change the degrees thus taken into hours, and scruples of hours: these shall those demanded at the time of the observation.

Proposition VIII.

To shew other Modes of finding out of Longitude, which exhibit not primarily and properly the Longitude, but the very place of the Point (whose Longitude or Meridian is only demanded): yet it is commodious to use for the Constituting or examining of the Longitude of Terrestrial places.

The first Mode.

The distance and Latitude of two places being given, to find the Longitude of one place from the other; but in Maps which Mariners use, and in Globes to find the Point of an unknown place, if that another place be given, (for there is always one place known or given).

If that by a *Trigonometrick Calculation*, you will find out the accurate Longitude, you must find the Angle on the *Spherical Triangle*, all whose sides are given, viz. the distance being turned into degrees, the *Complements* of Latitude, or distance of the places from the *Pole*: the computation must be made from the two sides of the comprehended Angle, which are the *Complements* of Latitudes, or which are the *Arches* intercepted between two places. The Method must be taken from *Spherical Trigonometry*.

But in *Mariners Maps*, and the *Globe*, the unknown place of the Point is thus found from the given.

In

In *Mariners Maps* the given distance is taken by the interval of the *Compass* from the opposite *Scale*, and one foot being fixed on the given place, the other is turned round until it touch, or cut the Parallel of the other Latitude, which is that of the unknown place. The Point of the *Contact*, or *Section* is the place demanded or unknown. But other *Maps* are unfit for this purpose, neither do the *Mariners Charts* exhibit an accurate distance of places.

On the *Globe*, let the given distance be turned into degrees and Minutes, and let them be taken by the interval of the *Compass* on the *Aequator*. Then let the degree of Latitude of the unknown place be noted, let one Foot of the *Compass* be placed on the given place, and let the *Globe* be turned until one extremity of the Foot touch the Point of the *Globe* subject to the noted *Meridian*: that shall be the place demanded. Or let the Parallel of the unknown place be described with Chalk, and then one Foot of the *Compass* being fixed on the given place, let the other be turned round until it cut that Parallel, or touch it. This Point of the *Section* is the place sought for, whose Longitude is then reckoned in the *Aequator*.

The second Mode.

A Quarter being given, in which any place unknown (that is whose situation is unknown) doth lie from the noted place, or place given, and the Latitude of both places being given, to find the Longitude of the unknown place from the place known, and to exhibit the place on the *Globe*, and *Mariners Chart*.

By the given place, we understand here the Angle intercepted between the *Meridian* of either place, and the Line drawn from the one place to the other, which is more commodiously explained on the *Globe*, or by a *Diagram*. If therefore by *Calculation* you would find out the Longitude of one place from the other, the *Spherical Triangle* must be solved, in which there are two sides given, (to wit, the *Complements* of Latitude of both places) and the Angle adjacent to the given side of either. But the Angle comprehended from the two given sides is that demanded. For this will exhibit the sought for Longitude.

But in a *Globe* and *Mariners Charts* it is not needful to find out Longitude, neither can it at the first be found out, but the place unknown is found from the given places.

In the *Globe*: Let the place be brought to the *Meridian*, let the *Pole* be Elevated for its Latitude, and let the *Vertical Quadrant* be applied to it: let the Parallel be drawn with Chalk at the Latitude of the other place unknown. Then let the extremity of the *Quadrant* be applied to the given *Plaga* of the *Horizon*, viz. in which the other unknown place lyeth from the known. The Point of the Parallel where the *Quadrant* cutteth or toucheth it, is the place sought for, whose Longitude shall be reckoned in the *Aequator*.

In *Mariners Charts*: Let the Parallel be drawn to the Latitude of the unknown place, then from the given place let a Line be drawn for the given quarter, the Point where this cutteth the Parallel is the place sought. But if the *Loxodromick Plaga* be given, we should do otherwise, of which in the 39 Chapter.

The

See Chap. 29.
Proposition 3.

Other ways
for the finding
out of Longi-
tude.

The first
Mode.

Mariners
Maps.

The second
Mode.

Not needful
to find out
Longitude in a
Globe, and in
*Mariners
Charts*.

The third Mode.

A Quarter being given, and the distance of one unknown place from the other, whose Latitude is given, to find out the Longitude of that place from this; but on the Globe and Maps; if this place be given, to exhibit the situation of that.

The third Mode.

If you desire to find it by Calculation, two Angles are given in the Spherical Triangle (the Complement of the Latitude of the place known, and the distance of the unknown place being turned into degrees); and the Angle comprehended from the *Plaga* given; from these three given, the opposite Angles to the distance must be sought for. For this will exhibit the Longitude of the other place from the known place. But on the Globe, and *Mariners Charts*, the place is thus found: let the Pole be Elevated for the Latitude of the place given; let the *Quadrant* be applied to the *Vertex*, and let the other extremity be applied to the given *Plaga* of the *Horizon*. Then the distance given being turned into degrees, let it be reckoned on the *Quadrant* from the *Vertex*. The term of the Numeration shall be the place sought for on the Globe. But if that the Longitude be only sought for without the designation of the place, that is, if you are minded to resolve a Spherical Triangle by the Globe, it will be done after this Mode.

See Chap. 33.

We will give Examples in the 33 Chapter, which is also to be observed in the following Chapters. There also we will shew by one Example how such Problems may be solved by the *Plainsphere*. Concerning all these, also Tutors may instruct their Scholars from the Method of the *Logarithms*, if that they be studious in these matters. But *Mariners* use Calculation, or the *Plaine Sphere*. For the use of a Globe is not so commodious in a Ship.

A Globe not commodious in a Ship.

In *Mariners Charts* Let a Line be drawn from the given place for the given quarter, and by the interval of the *Compasses*, let it be taken on the Scale; the distance of the places being opposited, and one Foot being fixed on the place given, let the other Foot be placed in the Line drawn for the *Plaga* or quarter. This Point shall be the place sought for, but yet not exact, as we shall shew in the following Chapter.

The fourth Mode.

The distance of a place unknown, being given from two places known, to exhibit that and the known one in the Globe, and Maps; but to enquire its Longitude by Calculation.

The fourth Mode.

In the Globe: Let one distance by the interval of the *Compasses* (turned into degrees) be taken on the *Aequator*, and one Foot being fixed in the place from those given, whose distance was not taken; let an Arch be drawn on the Superficies of the Globe, by the other Foot, which hath the Chalk at its end.

After the same Mode, a distance being taken from any other place, let an Arch be described from this, as from a Center on the Superficies: the Point in which this Arch cutteth the former, is the place demanded.

In *Mariners Charts*, we must act after the same manner, but yet the distances given must not be changed into degrees, but must be taken on the opposite Scale. But if the place be somewhat more remote from the place given, an over great error may be committed, by reason that the *Charts* do not perform this accurately.

The invention of Longitude by Calculation, because it hath much difficulty, as the *Diagram* requireth; therefore I shall leave it to be taught by some Tutor, and not describe it in words.

The

The fifth Mode.

Two places in the Earth being given, and the Quarters in which some other unknown place is situated at them, to find out this third place in the Earth, Maps, and Globes, and to enquire the Longitude of this place by Calculation.

The fifth Mode.

In the Globe, Let one of the given places be brought to the Meridian, and let the Pole be Elevated near its Latitude, let the *Quadrant* be applied to the *Vertex*, and with the other end (in which *to wit*, at this noted place the third unknown place is put to lie) and at the *Margent* of the *Quadrant* by a pointed Chalk, let a small *Periphery* be drawn. Then let the other given place be brought to the Meridian, and the Pole Elevated near to its Latitude, let the *Quadrant* be affixed to the *Vertex*, and the other extremity to the given *Plaga* of the *Horizon*, *to wit*, in which the third unknown place is placed to lie at this, same known place the Point, in which the *Margent* of the *Quadrant* cutteth the *Periphery* before drawn with Chalk, is the third place demanded.

On Maps It is thus done: Let a Line be drawn from one given place for the given quarter of the three places; after the same Mode let the Line of the quarter be drawn from the other given place. The Point in which these two Lines mutually cut one another is the place demanded.

After the same Mode we should do on the Earth, if that we would Act Scientifically: neither in Sciences do we value hinderances, and impediments, so that we may comprehend the Mode in our mind.

The Calculation in which our unknown Longitude of a place is found, from these given, we leave to the Instruction of a Tutor if that he hath apt and capable Scholars.

But more than enough hath been said concerning the invention of Longitude, the ample use of which we have explained in the 2d Proposition.

Here should be added a Table of the Longitude and Latitude of the chief places of the Earth, which the Author hath Collected, and did here insert; but being but short, and having Maps of the several Kingdoms of the World in the other Part, or Volume, to which the Latitudes and Longitudes are added, they are thought convenient to be omitted here, and referring the Reader to the particular Maps, by which you may easily find the Latitude and Longitude of any place desired.

Moreover seeing that there is great use of Declination and Ascension of the fixed Stars, both in Geography and Navigation, I shall here add a Catalogue of the Stars of the first Magnitude, with their Declination and direct Ascension at the Year 1650. For it is known from Astronomy, that in progress of time, a change is made in these by reason of the proper motion of the Stars above the Poles of the *Ecliptick*. But in the use it is convenient to have such a Table of all the Stars, because we have not alwaies a conveniency of using the same Stars. But we only lay down these for Exercise, and for the trying the proposed Problems in these. This business belongeth to Astronomy, but the use is notable both in other Sciences, and also in Geography.

Astronomy sheweth how a Declination, and direct Ascension may be found at every Year.

The fixed Stars as to their Declination and Ascension, of great use in Geography, and Navigation.

A

A TABLE of the DECLINATION

And right Ascension of the Stars for the Year 1650.

The Letter S, sheweth the Northern Declination, and the Letter A, the Southern.

The Names of the Stars.	Declination.		Right Ascension.	
	deg.	min.	deg.	min.
Of the first Magnitude.				
<i>Oculus Tauri.</i>	15	46 S	64	0
<i>Regulus, or Cor Leonis.</i>	13	39 S	147	27
<i>Cauda Leonis.</i>	16	32 S	172	59
<i>Spica Virginis.</i>	9	17 A	196	44
<i>Cor Scorpii.</i>	25	34 A	242	4
<i>Lucida Aquarii.</i>	31	24 A	339	28
<i>Arcturus Bootis.</i>	21	4 S	209	59
<i>Lucida Lyre.</i>	38	30 S	206	17
<i>Cauda Cygni.</i>	44	3 S	307	23
<i>Capella.</i>	45	35 S	72	44
<i>Pes Orionis Sinister.</i>	8	38 A	74	29
<i>Sirius, Canis Major.</i>	16	13 A	97	26
<i>Humerus Dexter Orionis.</i>	7	18 A	84	7
<i>Canis Minor.</i>	6	6 S	110	17

CHAP.

CHAP. XXXII.

Of the mutual situation of places, and composition of the Terrestrial Globe and Maps.

Proposition I.

A place being given in the Earth, to find the situation of other places at that place.

Now the situation of one place to the other is termed that *Plaga* in which this lyeth at, or an *Angle of position*, that is an *Angle*, which the Meridian of the given place maketh with a Line, or *Periphery* drawn from this place to the other. For Example, if we be in *Amsterdam*, and desire to know in what situation other places lie unto it, as *Rome*, *Leyden*, the *Hague*, or the like.

The first Mode.

To those places that a prospect is granted from the place given, their situation may exactly be observed to this place by *Instruments*. Let a *Geometrical Instrument* be placed in an high *Tower*, or the place of the given place, so that it may be Parallel to the *Horizon*, and the Meridian Line being found, let one *Rule* of the *Instrument* be applyed unto it, and the other having a *Perspective* must be directed to the conspicuous place. The *Arch* of the *Periphery* intercepted between the two *Rules* is the *Angle* of the position of the place observed at this place; and from thence his *quarter* shall be known.

So the situation or position of all other vicine places shall be observed, then let us go to these places, and from them by the same *Mode* we shall again discover the situation of other places: and then we may so act over the whole Superficies of the Earth, except that other ways were known, by which we might come more easily to the demanded place.

The second Mode.

If that the proposed places may be had on the Globe, let the place given be brought to the Meridian, and let the Pole be Elevated for its *Latitude*; let the *Quadrant* be affixed to the *Vertex*, and let it be applyed to one, and the other places, whose situation we desire to know at our place. The extremity of the *Quadrant* in the *Horizon*, will shew the *Angle of position*, and the *quarter* sought for. And therefore we shall say, that *Rome*, *Constantinople*, lie from *Amsterdam* towards this or that found out *quarter*. Which that we may conceive in the *World*, we ought to know the Meridian Line, or *quarter* of the *North* and *South*, also the *East* and *West Equinoctial*, for from these being well conceived of, the intermedial *quarters* may easily be conceived. Here must be collected what hath been said concerning *quarters* in the 20 Chapter.

The third Mode.

From Maps of *Straight lines*, if that the places propounded be to be found in them, it is easy to discover the situation of those places to this by the eyes. For through the given place a right Meridian Line is conceived shewing the *North*, and *South*, and another Line transverse, or shewing the Parallel of the place, which discovereth the *Eastern* and *Western quarter*. From these the intermedial *quarters* in which every place is beheld, are easily discovered, or else they are more accurately known by Lines drawn on the *Quadrant* of the *Periphery*, if that there be need of a more accurate knowledge. But yet this Method is not compleat except in particular Maps.

In Maps of *Crooked lines*, the *quarters* or situations of places are not so accurately sought as the other place.

S s.

The

Of finding of the situation of places in the Earth, &c.

The first Mode.

The second Mode.

See Chap. 20.

The third Mode.

The fourth Mode.

The fourth Mode.

The *Latitude* and *Longitude* of two places being given, the situation of one to the other is exactly found by a *Trigonometrical Compute*, both that which is *Vulgar*, as that which is *Logarithmetical*, or by a *Catholick Planisphere*, or also by the *Globe*. For let a *Spherical Triangle* be had, in which three things are given, *viz.* the *Complements of the Latitudes* of both places, and the *Angle* comprehended from these, which is known from the difference of *Longitude*. Now let the opposite *Angle*, or adjacent to either of the two sides be sought, for this will shew the *Angle of position* of one place to the other, and the very *quarter*. A *Diagram*, and the lively instructions of a *Tutor*, will make these more clear; and hence appeareth the use of the *Table of Longitude* and *Latitude* of places.

The fifth Mode.

The fifth Mode.

From the given distance of a place from two places, or from the given distance and *Latitude*, his *quarter* or *situation* to the other place is found out by the solution of the *Spherical Triangles*.

The sixth Mode.

The sixth Mode.

The *Latitude* of two places being given, the distance of the *quarter* of one is found to the other by a threefold Method, as hath been said. Other things given may be propounded by which we may find out the *quarter*.

Proposition. II.

A place being given on the Earth or Globe, to exhibit all places which lie at the given place, in some one given quarter, or situation.

Of the knowing the places in the North-East quarter from Amsterdam.

For Example, we desire to know all the places which lie in the *North-East quarter* from *Amsterdam*.

Let the Pole be Elevated for the *Latitude* of the given place, and let the place be brought to the Meridian; let the *Quadrant* be affixed to the *Vertex*, and let the other extremity be applyed to the given *quarter* of the Horizon. So we shall behold the half part of the places sought for, *viz.* those, which are adjacent in the Globe to the *Margin* of the *Quadrant*, the other half part is beneath the Horizon at the *point* opposite to the *Vertex*.

But the construction is more easy for the Earth it self: *to wit*, Let the *Periphery* of the great Circle be brought to the place given, which with the Meridian of that place may make the given *Angle* of the *Position*. All the places in the half *Periphery* are those sought for.

Proposition III.

A place being given in the Earth, or on the Globe, to exhibit all those places, at which the given place, hath some one given situation or quarter.

Of the knowing the places which lie North-West to Amsterdam.

For Example, we desire to know all the places, unto every one of which *Amsterdam* lyeth in the *North-West quarter*.

But the Problem may with more delight be thus propounded; Any place, in the Earth, or on the Globe, being given, as in *Amsterdam*, to shew all those places

places, from which whilst we desire to go to the given place *Amsterdam*, we must direct our Course from every one of the places to one and the same given quarter.

The preceding Problem was locally plain, because the place of the demanded points, was the *Periphery* of the Circle, which may be exhibited on a plain; and is always situated in one plain. But the present Problem is solid, or rather doth belong to the Superficies. For the place of the demanded points in the Superficies of the Globe is not any *Periphery* of the Circle (except when the quarter given is *Northerly* or *Southerly*) but a certain peculiar crooked solid line, that is, which may not be on a plain, but a Crooked, *to wit*, a *Spherical Superficies*: yet neither is it a *Loxodromical line* (of which we shall speak in a peculiar Chapter) but a Crooked line of its own kind terminated on both sides. Now for the conceiving of this line, or the places themselves on the Superficies of the Globe, let the given place be brought to the Meridian. Then if the quarter given be *Oriental*, it is certain that the demanded places are seated in the part of the Globe towards the West removed from the Meridian of the given place (but it is otherwise if that the quarter given be *Occidental*) and if the quarter given be one of those, which incline from the East, or West, towards the North, the places demanded shall lie between the South, and the primary *Vertical* of the given place. But it is otherwise if the quarter given be one of those, which incline from the East, or West towards the South: if the given quarter be of the *Eastern* or *Western Equinoctial*, the place of the demanded places shall be some one Crooked line, beginning from the given place, and terminated in the *vicine Pole*, seated from the *Oriental* part of the Meridian, if the given quarter be of the West, but from the *Occidental*, if that the given quarter be of the East, and must be conceived at this line: so the places must be sought or exhibited from which *Amsterdam* lyeth towards the *Western Equinoctials*. Because the quarter or *Vertical Quadrant* respecting the *Eastern*, or *Western Equinoctial*, falleth in with the *point* of the *Aequator*, which is 90 deg. absent from the Meridian of every place. Therefore first let the point drawn from the given place, be conceived to be seated at the *Aequinoctial quarter*, or *point* of the *Aequator* in the *Horizon*, and therefore it is certain that all the places sought, ought so to be seated from the *Oriental* part of the Meridian of *Amsterdam*, so that their quarter, or primary *Vertical Quadrant*, respecting the West, must cut the *Quadrant* of the *Aequator* between the points in the *Occident*, and the Meridian. Therefore from every one of the points of this *Quadrant*, let the greatest *Peripheries* be conceived passing through *Amsterdam*, and the Meridians drawn from these points as from the Poles, in which the first conceived *Peripheries* every one cut their Meridians, are those demanded: they make such a Crooked line as I have said, which putteth it self into the Pole, neither is it infinite. Hence the difference is manifest between the Crooked line and the *Loxodromick*. For this doth not arise in journeys instituted towards the *Eastern* or *Western Equinoctial*. All the kinds of this of which we now do speak, are such that are contained and run within the Pole, and the *Quadrants* of the 2 Merid. whose distance doth not exceed 90 deg. But where any quarter is given intermedial between the *Quadrants*, for Example, places are sought from which *Amsterdam* lyeth towards the *South-West*, or in the quarter removed 45 deg. from the Meridian of every place towards the West from the South. First therefore let another Meridian from the *Oriental* part of *Amsterdam* be imagined (for in this it is manifest, that the places sought ought to be) which with *Amsterdam* maketh an Angle of 45 deg. or between which and that of *Amsterdam*, the intercepted Arch of the *Aequator* is 45 deg. This shall be the term of the places sought for, neither beyond it can any place be found in any Meridian which doth satisfy. Let a perpendicular *Periphery* be supposed to be drawn from *Amsterdam* into this Meridian. Moreover because the quarter given seemeth to incline towards the South from the West, thence it is certain, that the places demanded should be situated in the space of the Triangle whose sides are now first drawn *Perpendicular*. Secondly, part of this Meridian is

intercepted between the drawn *Periphery* and the vicine *Pole*. Thirdly, part of the *Meridian* of *Amsterdam*, is between *Amsterdam*, and the adjacent *Pole*.

In this space the *Crooked line*, all whose *Points* answer the demand, is seated, which creepeth forwards from *Amsterdam* with a crooked passage even to the *Pole*: For the Description of it many *Meridians* are to be taken, from which the great *Periphery* drawn to *Amsterdam*, may make with the *Meridian* from whence it is drawn, an *Angle* of forty five degrees for our Example. So many *Points* of this *Crooked line* to be described shall be found.

We have treated fully of this *Crooked line* in our Book of *Crooked lines*, here we have only touched what is proper to *Geography*.

Proposition IV.

The Latitude of one place being given, and the distance from the other place, and the quarter in which this other place is seated from it, to find the quarter of this other place in which the former place is seated at this other place.

It will be better understood by an Example: *Viz.* Let the quarter be given in which the City of *Hamburg* is seated from *Amsterdam*: we seek the quarter in which *Amsterdam* is seated from *Hamburg*. The vulgar opinion is that the contrary quarter is to be taken, which is false. And in this all *Mariners Charts*, and all *Right lined Maps* do much err. The solution is easy by a *Trigonometrical Calculation*, or by the *Globe*, or by the *Plain Sphere*.

Proposition V.

To make a Terrestrial Globe.

So the vulgar speak very confusedly by this *Problem*: but the distinct understanding of it is thus to be propounded in a *Mathematical Style*. Any *Point* being given in the Superficies of any *Globe*, which is put to represent any place situated in the Superficies of the Earth (or in the given half *Periphery* to find out any *Lines* and *Points* in the Superficies of the same *Globe*, which are so mutually seated to the given *Point* and to themselves, as the places and *Lines* in the Superficies of the Earth, which ought to be represented by them, are situated at the place first taken, and mutual to themselves.

The first Mode.

The best, most easy and exact method is that, by which, from the *Longitude* and *Latitude* of places in the Superficies of the *Globe* itself, the places and *Points* sought for, or representing the parts of the Superficies of the Earth are assigned, which although *Latitude* is not used in making of *Terrestrial Globes* which are sold in a great number, (because that this may be done another way, where from the abundance of their Sale, the cost and charges sufficiently payed, which is not of facility and lesser expence for the making of one *Globe*, but most easy and prompt for the making of innumerable of the same *Magnitude*, and less expence, of which I shall speak in the third place; yet the foundation of the construction of it dependeth on this Description conceived on the *Globe*: moreover where peculiar *Terrestrial Globes* are to be made in respect of notable *Magnitude*, and the places of the Earth are to be designed on its Superficies; as *Princes* that favour the *Mathematicks* are wont to have them, as for example, *Amderick Duke of Holstein* hath ordered such a *Globe* to be made, whose Cavity is to be so great, that one may commodiously seat it, and in the Superficies all the fixed Stars are to be painted in a golden

golden colour, or little Stars made, are let in with a small instrument, and the *Globe* moveable, and so but turned in the *Zodiac*, and with the addition of a small instrument shall be wheeled round in 24 hours, so that the Spectator setting within its Cavity may see the Stars in one and another situation, to arise, Attend to the *Meridies*, to set, even as we see the Stars to do in the Heavens. But the external Superficies to come to our purpose, shall exhibit all the places of the Earth, so that this *Globe* shall be both *Celestial* and *Terrestrial*. But when I say such places are to be engraven, or painted on the Superficies of great Globes, Artists cannot use their Mode by applying of Maps made of Paper, neither would that be so convenient in so great and famous a Work. But now they must be engraven in the *Globe*, and the places be illustrated with colours, as also the *Peripheries*, the *Rivers*, and such like, as are found in the Earth. Now this is done thus, (using also at the same time a vulgar *Globe*, in which the Courses of the *Rivers*, Seas, and the Earth are beheld.) Let a great *Periphery* of the *Globe* be described through the given point, (or the assumed point at your choice, if that be not given) in the Superficies, which *Periphery* we shall constitute for the *Meridian* of this place; then let an *Arch* be taken in this from that point, equal to the *Latitude* which that point is put to represent: and let the term be noted, and let another *Arch* equal to the Complement of the *Latitude*, or distance of the place from the *Pole*, be taken from the same point, or from another point in the same *Periphery*, the term of this *Arch* shall be the point which must represent the *Antick* and *Antarctick Pole* of the Earth, because it is so seated at the given point, as the *Pole* of the Earth which is put to be represented from the point. Therefore we call this point the *Pole* of the *Globe*, but the term of the *Arch* first noted sheweth the point in which the *Equator* cutteth the *Meridian* of the given place.

And therefore from the *Pole* of the *Globe*, let a great *Periphery* be drawn by the interval of the *Compasses* from that *Pole* to the Mentioned term, which shall be the *Line* of the *Equator*, or the *Equator* of the *Globe*.

Then let a *Pole* be taken in the *Meridian* opposite to the former, and let an *Arch* be put through from one to the other through the Cavity and Center of the *Globe*, and let a *Brass* Meridian be affixed in its extant parts, prepared by a diligent *Artist*, having every one of its quarters divided into degrees. Now these points must be applied to the *Axis* where, o, is, or where the division of the quarters do end, so that the beginnings of the first degrees may exactly hang over the *Line* of the *Equator*. Let the *Equator* be accurately divided into degrees. Moreover if you will take the *Meridian* of the given place, or of some other place for the first, it is all one, but it is better to take that for the first, which the *Tables* of *Longitude* and *Latitude* which are to be used in the designation of places, do acknowledge for the first, or from whence they number the *Longitude* and *Latitude* of the other places. And therefore if the place first given, is not that which the *Tables* acknowledge, let the *Longitude* of the first given place be taken from the *Table*, and let so many degrees be numbred from that point in the *Equator*, where the *Meridian* of the first place cutteth it. The term of the Numeration shall be the point for the first *Meridian* of the *Tables*. Now unto what quarter the Numeration must be made is known, *viz.* towards the West: but what part of the *Globe* is to be taken for the *Occidental quarter*, and what for the *Oriental quarter* from the *Meridian* of the first place, you shall thus know. So place the *Globe* that the *Semicircle* of the *Meridian* containing the first point may be uppermost, the other beneath, and regard the *Globe*. Now the *Pole* *Antick* should be nearest the *Antarctick* more remote; if that the place given near the *Antick Pole*, but if near the *Antarctick*, then the *Antarctick* must be placed nearer us, so that *Hemisphere*, which is in our right hand must be taken for the *Occidental* places, and the other for the *Oriental*. But

Of the making
a Terrestrial
Globe.

The first Mode
of making Terrestrial
Globes.

A great Globe
prepared by
Frederick
Duke of Hol-
stein.

But in the *Section* of the first Meridian noted in the *Aequator*, let those numbers be ascribed to the *degrees* of the *Aequator* beginning from that *Section*, *viz.* 10, 20, 30, and so on. And then so must it be done in representing for any other place, let the *Longitude* be taken from the *Table* of that place, and reckoned in the *Aequator* from the first Meridian. Let the *term* of the *Numeration* be placed under the Meridian, and let the *degrees* of the *Latitude* of that place which there we have extracted from the *Table*, be numbered in this from the *Aequator*. The *point* of the Globe which is then subject to the *point* of the Meridian where the *Numeration* of the *Latitude* endeth, will represent that place of the Earth. And so we must do with all places, all *Inlets*, and *Fountains of Waters*. Their *appellations* must be engraven. So the *Problem* is satisfied, for all the places shall so be seated in the Globe, as in the Earth it self.

Yet in the practice we must not so act at the first, because it is better to assume Pole, for the first *point*, or that which may represent the Pole: and in the making of the Globe, let the *Axis* be added, whose ends denote the Poles, and the first Meridian of the *Tables* must immediately be noted on the Globe, and then the other places, as I have said. But such great Globes are seldom made from *Tables*, but for the most part imitate other lesser Globes, from whence the *Latitudes* and *Longitudes*, and the tracts of *Rivers*, &c. are taken.

The second Mode.

This Mode is more apt to design some place, *viz.* one or two in the Globe from others given, than to be used for the making of an intire Globe: for it useth the *distances* of places. Let the greatest *Periphery*, or the *Arch* of the greatest *Periphery* be drawn through the Globe, and in this from the given *point*, let the *Arch* be taken, as much as the distance of the other place is from the place first given, the *term* of the *Arch* shall be other place. Then if you will design any third place, take by the interval of the *Compass* the distance of that third place, from the other two even now designed, and from these as from *Centers*, let the *Arches* be described by these intervals of the *Compass*. The *point*, in which these *Arches* mutually cut one another, is the *point* of the third place.

But as I have said that this *Mode* is not commodious for the intire designation of the Globe; but when we will design any place in the Globe now made, which is not yet in it, and desire to do it from the only noted distance of that place from the two others which are found in the Globe, because it is easy, and we have not time by reason of *Calculation*, to search the *Longitude* and *Latitude* of this third unknown place. For thus we shall easily find the situation of this *point*, or place in the Globe, and also the *Longitude* and *Latitude*; then the *Problem* is this.

The distance of a place being given from two places that are found on the Globe, to design the situation of that place on the Globe, whose distance is given, of which in the following *Chapter*.

The third Mode, the Vulgar one of Artificers.

The third *Mode* of exhibiting and representing the Superficies and places of the Earth in the given Globe, is that which *Artificers* use in the making of all Globes both *Celestial* and *Terrestrial* (except those great ones of which I have now spoken) which have nothing of compendiousness, or commendation from the facility, if that the places of the Earth be but only to be represented from one Superficies of the Globe, but it is to be done on the Superficies of the Globes of the same *Magnitude*; this practice hath great Prerogative before the other: for the *Mode* is thus; the Superficies of the Globe and the Earth is conceived to be divided into twelve parts (or more if the Globe be to be made of a larger form) through the Meridians drawn from Pole to Pole, so that in any two Meridians, the 12th part of a Superficies is included from Pole to Pole. Then

Chap. XXXII. General GEOGRAPHY.

Then on a Plain let the like Figure be included in such a part of the 12, in two *Arches*, which then in the Globe make the half *Periphery* of the Meridians. And in many Meridians drawn through every degree of the *Aequator*, and divided into portions, and segments of the *Parallels* affordeth a kind of *lattice work*: the portion of the *Aequator* is in the midst: all the Meridians end in the Poles, then the Meridian being taken for the first, which the *Table* of *Longitude* acknowledge; let the *degrees* be noted from it in the *Aequator*, the numbers being ascribed, so that the *degrees* of *Longitude* of every place may be accounted. Then in every one of these places representing the 12 parts of the Superficies of the Globe, let the places be noted for the places of the Earth, every one at his *degrees* of *Longitude* and *Latitude*, which are extracted from the *Table*, and the name is ascribed to the *Table*, and the tracts of the *Rivers* and *Bays* drawn, as also of the *Lands*: these being thus described on *Paper*, or *Wood*, then make an incision, and engrave according to that exemplar in Plates of *Brass*, which then is fit for the Printing Press. Which are afterwards applied and joyned to the Superficies of the Globe, so that its ends may touch the *Axis* or Poles of the Globe; yet in many the *Papers* do not touch the Poles, but are so made only to touch the *Arctic*, or *Antarctic* Circles: and peculiar *Papers* are taken for the *Polar* Spaces. For so they are more easily applied, especially in great ones so in the Superficies of this Globe all the places of the Earth are exhibited, to which is then added a *Brass* Meridian and Horizon with a Foot, *Morary Circle*, and an *Index*.

There are two things in this description which require a more full explication, the first I suppose to be plain, and intelligible.

First, after what *Mode* these 12, or 24 parts are to be described, according to the Example of which the engraving in *Brass* must be made.

Secondly, how plain *Paper* can be applied to the Superficies of the Globe.

The first is thus done commodiously enough. For Example, let the 12 portion of the Hemisphere from the Pole to the *Aequator*, be applied to the Globe. First, from the known Diameter of the Globe, let the quantity of the greatest *Periphery* be found out according to the proportion of *Archimedes*, or the other proportion of the *Periphery* to the *Diameter*. For Example, let the Diameter of the Globe be two Foot, and let the *Longitude* of the Foot in the noted *Paper* be divided into 10 digits, and the 10 digits, into 10 grains, that there may be 100 parts in a Foot. Let it be done so that as 7, is to 221 so 200 is to 628 7 parts, or 6 28 7 Foot for the *Periphery*; the fourth part of this, that is the *Quadrant* of the *Periphery* shall be of 157 7 hundred, or 1 57 7 Feet, and the 12th part of 52 2 2 hundred, or 4 a Foot, and 2 hundred and 2 of an hundred. These being found, let a long Line of 52 2 2 hundred be drawn on the *Paper*, (from the ascribed Scale); from the middle of this Line let a long perpendicular of 157 2 2 hundred be erected, which shall be the *Quadrant* (its extremity shall be the Pole) and may be divided into degrees (you have the *Longitude* of one degree if you divide 628 7 by 360). Then let a *Periphery* be described from the Pole through the beginning of every degree, or of every tenth, (they shall be *Parallels*) in these *Peripheries*; from both parts of the drawn perpendicular let that part be cut off by the *Compass*, as much as is the 12 of the *Periphery*. Now how great it is in the opposite Scale is known from the proportion of the *Parallels*, to the *Aequator*, which we have delivered in the end of the IV. Chapter. So the points being signed in every *Periphery* and *Arch* you please, a Line must be drawn through them, and part of the *Paper* perminated by these Lines, must be cut off. For this being applied to the Globe will possess 12 of the Hemisphere. Now the application is easily performed, *viz.* if that the portions be small, for in these the distance between straight and Crooked, is little discovered, especially of the Earth when the *Paper* hath first been wetted; so it is readily applied. But the places in that *Paper* before they are applied, are consigned to their fit degrees of *Longitude*, and *Latitude*.

The second Mode of the making of Globes.

The third Mode of making of Globes.

The things worthy of note in this Mode.

See Chap. 4.

Proposition VI.

To compose Geographical Maps.

We may thus propound the Problem in a Mathematical Style.

The situation of an infinite Plain, or one to be produced at pleasure being given, to represent in that the places of the Superficies of the Earth, according to the Rules of Perspective. Or thus more generally: *A Point being given on any Plain, which is put to represent any place of the Superficies of the Earth, to find on the same Plain (infinite), divers other Points and Lines, which as commodiously may be, may represent to the life the places and Lines of the Superficies of the Earth, or their situation to the given place, or one to another.* So I think the sense of the Proposition will be better understood.

By reason that very few Students and favourers of Geography understand the Rules of Perspective, neither can they attain to any distinct knowledge of the Construction and nature of Geographical Maps, or judge of their commodity or defects, except they know the Principles, according unto which they are made. Therefore here a few things necessary in this Doctrine must be explained from the Art of Perspective. Now that Art, as most know, is conversant in representing all Objects, or Bodies on some Table, or Plat-form, as the parts of a Picture are so conformed, and seated one to the other, and so appear to our sight (the eye being fixed to some certain place) as the parts of the body which it representeth. This indeed is the end of the Perspective. But the Mode by which they endeavour to obtain it, is this:

Then they will represent a point, a Superficies, or any Body of what shape soever in a Table, Board, or Paper, (whether they behold it, or conceive the Idea in their fancy). 1. They Imagine it is discerned by the eye as in or from one Point, and they do assign a certain situation or place to the eye whence the sight may be made. 2. Then they conceive some one infinit plain (they term it a *Glass*, because it is better for conception, if that the plain be understood to be pellucid) to be interposed in some certain situation between the eye and the Object. Then 3. They conceive rayes or Lines to be drawn through that plain to the Eye from every point of the Object. They say that the points of this plain by which the rayes are so conceived to penetrate to the Eye, are the representation of the points of the Object it self, or the Shadow of it, as they term it; and these points being conjoynd by Lines, they determine the Figure which thence ariseth, in the Table to be the representation of the very Object of the Body, or Superficies in such a situation of the Eye, and this Figure of a Plain or Table remaining in its situation, doth not otherwise appear to the Eye remaining in its situation, then as if it beheld the very Object it self, (which yet the Opticks shew not to be altogether true in all respects, and it is easy to understand from the various position of an interposed Plain.) But by reason no better Method of representing Bodies is yet found, therefore we must be content with this. For Example, let the Superficies of the Earth, and all its Peripheries and places be represented on a Table. And therefore in the first we conceive the Eye to be fixed or situated as a point without the Earth in the Air. Then between the Eye and the Earth, a certain Table or Glass Plain to be extended, whose situation although it may be taken at pleasure, yet in practice it is so assumed, to a better and more ordinate Figure of an equal form, that it is perpendicular to the Line, which is drawn from the Eye to the Center of the Earth. Then we conceive Lines to be drawn, or Rayes to be emitted through the Table or Glass to the Eye from all points or places of the Superficies of the Earth (as from all the points of the Equator, of the Tropicks, Polary Circles, also of the Meridians; as likewise from all Cities, Sources of Waters, and the like.) Every one of these Rayes shall pierce the Table in certain points. These points therefore are the shadows, or representations of the places of the Superficies of the Earth, and if those points which

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are made by the Rays emitted from some one Periphery (as from the Equator, from one of the Tropicks, from a Polary Circle, or some other Meridian) be joyned by a drawn line, let it be either streight or Crooked, this shall be the representation or shadow of this Periphery, so we shall have all the Circles, and all the places of the Earth represented on a Table.

But because the Earth is round, therefore the whole Superficies of the Earth with all its places, cannot commodiously be represented on one plain, because they should make two places one and the same point on the plain, and those that are situated beyond the Hemisphere, would be represented with a false face: therefore half the Superficies of the Earth must be represented on one Table, and the other half on the other. And so the Eye may be taken within the Earth it self, viz. when we take up one Hemisphere to be represented, the Eye is conceived to be placed in the other Hemisphere, and the Table between that and the Hemisphere to be represented. The same must be understood, if that only part of the Superficies, as Europe, Asia, Spain, must be represented on the Table, for then we may assume the place of the Eye in the very Center of the Earth, if we please.

From these I think the Reader may sufficiently understand the nature and Mode of this Perspective Art, by which the places of the Earth are represented on a plain. The other two are more fully to be explained, from those which we have spoken of in this Method. Because from thence dependeth the variety and diversity of Geographical Tables.

We have said that a point must be taken for the representation for the place of the Eye without the Object to be represented, as without the Hemisphere of the Earth, or without the Superficies of Spain, or Europe. And therefore because there is an infinite space about any Object, and on that account there are infinite points, in which the Eye may be put contemplating the Superficies of the Earth, (or Europe, or Asia,) if that a particular Table must be made, and if the Rays be drawn to divers points from the same points of the Object, or Superficies, which may penetrate the same Table, the penetration of the Rays made in a very different place and situation, and therefore very unlike Figures arise thence in the Table; thence it cometh to pass that according to the various situation of the Eye (which we attribute to it without the Earth, or without that part which it ought to represent) there ariseth a various representation of that Superficies on the Table.

For as there existeth another sort of Frontispiece of the walls of an house, when the Eye may behold it from a situation directly opposite; another from an oblique situation; another from an upper place; another from a long place; and so changing according to the various situation of the Eye (which Tutors may explain by Diagrams); so there ariseth a different position of the parts of the Earth to be represented on the Table, if that the Eye be so constituted, or conceived in the Air in such a situation, that it may hang over the Equator of the Earth; and otherwise, if that it be supposed to exist in the pretended Axis of the Earth, or in the Semi-Axis of the Hemisphere, and otherwise if it be conceived to be eminent over any other place of the Earth. Thence it cometh to pass that both the Equator, and the Parallels, as well as the Meridians, obtain various representations, because the Rays drawn from them, existing in the Earth to the Eye perforate the Tables in divers points, endued with a various situation, which the Readers may easily understand, if that they have the living information and direction of a Tutor.

The other, which I esteem fit for the Readers consideration in this Method for his better understanding, is concerning the cause of the variety in the Magnitude of Tables, and representations: for we can shew the same Superficies of the Earth, as also of all the Bodies of the World, as Temples, Houses, and the like, on a great or small Table. The Cause is twofold, first, by how much the Eye is placed more remote from the Earth, or any Object, by so much the representation receiveth the lesser Magnitude, viz. the situation of the Table or Glass so remaining. 2. How much the Table, or Glass (in which the representation should be made by the perforation of the Rays) is nearer moved to the Eye, by

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The whole Superficies of the Earth being round, cannot be so well represented on a plain, as otherwise it is.

The Direction of a Tutor very profitable.

Of the composing Geographical Maps.

The knowledge of Perspective necessary in Geography.

The Mode for the obtaining the Art of Perspective.

so much the representation or projecture receiveth, the lesser form; by how much the nearer to the Object, so much the greater.

But if the Eye may be removed in any kind from the Object, (the Table remaining) so that it be removed in the same Line with the Center of the Earth, or so that it remain in one Perpendicular Line, to the Superficies of the Earth, therefore the Figure of the projecture is not changed, but only the Magnitude, the similitude remaineth. So also if that the Table be any ways moved to the Eye, or removed towards the Object, all the projectures do become of a divers Magnitude, yet they remain mutually alike, and represent all the places in a like situation, so that the Table shall observe the Parallel situated from the Eye in his access, and recess. But if the Table receiveth another position, and also if the Eye be not only removed, but also recedeth from that Perpendicular Line, then the like projectures shall not arise, and the places shall not have the like situation on the Earth, but besides a various Magnitude, there shall also be a notable dissimilitude in the situation of the places, one to the other.

But in the projectures of all Bodies, as also in the projecture of the Superficies of the Earth, it is so wont to happen, that we attribute such a situation to the Table or Glass, that it may touch the Body or Superficies in that Point to which the Line drawn is Perpendicular to the Superficies of the Body, or which is drawn from the Eye to the Center of the Earth: now to obtain the lesser or greater projecture we remove the Point of the Eye more or less from the Earth. But then we conceive the Earth to be very small.

This in general being explained concerning the projecture of the Earth, and the Original of Geographical Maps, we shall shew the Method of doing it: where first we shall shew whether these Tables should be made according to the Rules of Perspective, and whether all may be made according to them, for the end of these Tables or Maps is to the life, and exactly as may be to express the situation of the places in the Superficies of the Earth. Therefore it is demanded and that not unadvisedly, whether this may be done by another Method, which observeth not the Rules of Perspective; for whether it be done according to the Rules of Perspective, or contrary to them, so that it exactly representeth the situation of the places, the Table shall be accounted to be well done. To that I answer, that although certain Tables of some small Province may be made, and are also made by another Method, to wit, by Angles of position, or also by distances, as we shall shew in the last place, yet in a great part of the Superficies of the Earth it cannot be performed by a more commodious Method, than by the Rules of Perspective, although the true situation of the places may not be represented in the Tables made according to these Rules.

For we must know that in making of these Maps we must attend to a three-fold end. 1. That all the places must have such a situation and distance to the chief Circles of the Earth, as the Equator, the Parallels, the Meridians, as they have in the Earth it self, so that from those Tables the Parallels of every place, the distance from the Equator, from the Pole, the Zone, the Climate, &c. may be beheld, because that from thence many properties of the Regions and Celestial appearances do depend. 2. That the Magnitudes of every Region may have that proportion that they have in the Earth it self. 3. That every place may have the same situation to the other mutually which they have in the Earth it self.

Of these three requisites all Maps or Tables ought exactly to perform the first, and for the most part exactly do, because they are made from the Table of Latitude and Longitude of places; neither do the Rules of Perspective hinder the same. But for the second, they cannot accurately perform the same if that the Rules of Perspective be observed, because the crooked paths of the Superficies being more remote from the Eye, makes the representation lesser in the Glass than those parts subjected to the Eye: but yet that inequality is small and becometh insensible, if that the Eye be conceived to be remote an infinite interval from the Earth. But the third requisite can be performed by no larger Tables, such are those of the whole Earth, also those of the 4th part of the Earth and the greater Provinces although they may accomplish it in the lesser Regions, and the vulgar suppose

Things to be known about the making of these Maps.

suppose that it may be had in the larger Maps. But we shall more fully explicate this in the description. Only this we shall here advise in general, that in all Maps which we have, or which are sold by Artificers, viz. those that are universal, that place must be taken for the point, which shall be directly subject to the Eye in the projecture; that place I say of the Earth which is seated in the middle of the Table, for here we must conceive the Eye to hang over. This hath place in many particular ones, yet not in all. Moreover you may make the following Rules to be more plain, if that you make use of several Maps, which will the more illustrate and explain our Rules by the Examples.

The first easy Mode, the Eye being placed in the Axis.

In the first place, I exhibit this Method of painting the Hemisphere of the Earth, which placeth the Eye in some Point of the Axis of the Earth. For Example, we would represent the Arctick Hemisphere of the Earth, to wit, that which lyeth between the Equator and the Arctick Pole, and the places contained it, that is a, Geographical Map must be made of the Arctick Globe. Therefore we shall conceive the Eye to be placed without this Hemisphere, that it may hang over the middle Point of that Hemisphere, viz. the Pole Arctick, that the Eye may be with the Pole Arctick, and the Center of the Earth in one straight line, that is, that the Eye may be in the Axis of the Earth. And therefore it shall be either in the Axis from the part of the Equator towards the Arctick Pole, or in the Axis extended from the part of the Pole Arctick. But it matters not in what part it be put. For the Table or Glass in which the representation ought to be, let the place of the Equator be taken, or some Tangent of the Earth in the Pole Arctick, if that the Eye be conceived to be placed from this part. But to avoid confusion, and the better to express our selves, let us suppose the Eye to be placed in the Arctick Pole, the Plain of the Equator to be the Table. Moreover we conceive Rayes to be emitted from all the places and Peripheries of the Arctick Hemisphere, (whether it possess the Arctick, or other Point of the Axis) which Rayes therefore shall penetrate the place of the Equator. The Points in which the perforation is made, shall exhibit every place of that Hemisphere of the Earth, and the points made from the perforating Rayes, the Peripheries of the Tropick, if they be joyned, do exhibit the Lines which represent those Peripheries. By this Method it cometh to pass that the Equator becometh the term of this projecture: the Pole of the Earth may be represented from the Center of this Circle, or of the Equator: the Meridians make right Lines, all passing through the Pole, even to the Equator, the Parallels of the Equator, or the Circles of Latitude, the Tropick of Cancer, the Arctick Pole, and the like. Also by this projecture may be made these Circles, or Peripheries, whose Center is the same with that of the Equator, viz. the Point, which representeth the Pole Arctick. But the places of the Earth are represented every one in their Peripheries of Latitude, and the Meridian Line, viz. where the Meridian Line of the place cutteth the Parallel of the place, the Point of the Section is the representation of the place. But all the other Peripheries and Semiperipheries, which may be conceived in that Hemisphere, do not make in projecture straight lines, or Circular, but Eclipses: for Example, if we will represent the Horizon and vertical Circles of any place, all these in their projecture shall make Ecliptick Arches.

For the more easy imagination of projecture, by which Circles are represented in a Table, a radius Cone must be conceived, whose Vertex must be the Eye, let the Circle of the Earth to be represented be the base, let the sides be the rays drawn from the Periphery to the Eye: moreover this Cone to be cut by the Table, and according to the various position, a various Line and Section to be made, which is the projecture of the assumed Periphery on the Earth. So also the Ecliptick it self, whose half only is represented with the Arctick Hemisphere, maketh a portion of the Ecliptick. But yet to speak properly, the Ecliptick it self is not represented, because it cannot be conceived immutable on the Earth, but only in a certain situation, or at a certain moment of the day, and his

Maps necessary to be used.

See Scheme. Of the Hemisphere of the Earth which placeth the Eye in some Point of the Axis of the Earth.

We conceive the Earth to be of a small Magnitude.

intersection may be taken with the *Aequator* in any point of the *Aequator*, yet in all Maps by reason of its Commodity, the intersection of the first Meridian is assumed with the *Aequator*.

So therefore we have distinctly explained the Original and Method of the first sort of *Tables* or Maps, which have the Eye in the *Axis*: now I shall shew how such a Table is to be described in practice. In any Plain or paper let the middle point P, be taken for the Pole, and from that as from a Center, let the great or small *Periphery* be drawn (as we desire to have our Maps great or small) which we shall have for the *Aequator*. These two may be taken at pleasure, but the other points and *Peripheries* shall be found from them. Let the *Aequator* be divided into 360 deg. and straight lines being drawn through the Center and the beginning of every deg: these shall be the Meridians, from which that which is drawn at the beginning of the first degree from these 360, shall be taken for the first, so the rest of the lines shall shew the rest of the Meridians and *Longitudes* of the Earth from the first Meridian. Now the *Parallels of Latitude* must be described. There are four *Quadrants*, or quarters of the *Aequator*, the first 0, 90: the second 90, 180: the third 180, 270: and the fourth 270, 0. Let those be noted for the more easy appellation with the letters A B, B C, C D, D A, and let one be taken from these, for Example, B C, from every one of whose degrees as also from the 20 deg. 30 min. and the 66 deg. 30 min., let occult straight lines be drawn to the point D, (the term of the Diameter B D) or let the Rule be only applied to D, and brought round through every degree of the Quadrant B C: and let the 23 deg. 30 min. and the 66 deg. 30 min. in which these straight lines cut the Semidiameter P C, be noted, and from P as from a Center, and the *Peripheries* be described through every point taken in P C. These *Peripheries* shall be the *Parallels of the Latitudes* unto which in the first, and opposite Meridian, viz. A P, and C P, the numbers may be ascribed from the *Aequator* towards P, to wit, 1, 2, 3, 4, even to 90, so that the *Latitude* of every one may be conspicuous: but at the Parallel 23 deg. 30 min. the *Tropick of Cancer* shall be ascribed; at the 66 degree 30 min. the *Arctick Circle*. In the *Praxis* neither all the Meridians, nor all the *Parallels* must be coloured, but only every tenth, the rest must be represented with occult or obscure lines.

After all the Meridians and *Parallels* are described, it is easy to note from the Table of *Longitude* and *Latitude* of places, the places of the Earth, viz. of its Superficies; let the *Longitude* of any place be accounted from the first assumed Meridian in the *Aequator*, so we fall into the Meridian of the place; then from the *Latitude* of the place we choose a Parallel of the same *Latitude*, and the point where the Meridian cutteth the Parallel is the point, which representeth the assumed place of the Earth, whose appellation is to be ascribed unto it, and so we shall act with the inscription or projecture of any place to be taken, until the Maps, or *Tables* be finished.

If the Semicircle also of the *Ecliptick* be to be noted in it, that must be done before the designation of the places. We have said that the *Ecliptick* maketh the *Ecliptick line* in projecture, therefore its points through which that portion of the *Eclipsis* must be drawn, ought to be found. That is taken for the first point, or for the intersection of the *Ecliptick*, and the *Aequator*, in which the first Meridian cutteth the *Aequator*, which therefore is noted in the sign of *Aries*. But the last point of this half *Eclipsis*, or the other intersection of the *Aequator*, and the *Ecliptick*, viz. the end of *Virgo* shall be in 180, the opposite point of the *Aequator*, the intermedial point is that in which the Meridian 90, cutteth the *Tropick of Cancer*. So we have gotten three points, through which the portion of the *Eclipsis* to be described passeth, (which is lesser than the half *Eclipsis* (which are the points of the 1 deg. of *Aries*, *Cancer*, and *Libra*: for finding the other points, as the 1 deg. of *Taurus* and 15; the 1 deg. and the 15 degrees of *Gemini*; the 1 deg. of *Leo*; the 1 deg. of *Virgo*, the *Declinations* of these points must be taken from the Table and the right *Ascension* which are here ascribed.

Decl-

How Tables of the first sort are to be described by practice.

Rules to be observed if the Semicircle of the *Ecliptick* be to be noted.

Declination. Right Ascension.

	deg. min.	deg. min.	
The 15 of <i>Aries</i> and <i>Virgo</i>	5 56	13 48	166 for the 15 deg. of <i>Virgo</i> .
The 1 of <i>Taurus</i> and <i>Virgo</i>	11 31	27 0	152 for the beginning of <i>Virgo</i> .
The 15 of <i>Taurus</i> and <i>Leo</i>	16 24	42 0	187 for the 15 deg. of <i>Leo</i> .
The 1 of <i>Gemini</i> and <i>Leo</i>	20 13	57 0	122 for the beginning of <i>Leo</i> .
The 15 of <i>Gemini</i> & <i>Cancer</i>	22 41	73 0	106 for the 15 deg. of <i>Cancer</i> .

Then where the Meridian 13 deg. or 4 deg. cutteth the Parallel 5 deg. or rather 6 deg. that point shall be the 15 deg. of *Aries*; also where the Meridian 27 cutteth the Parallel 11 $\frac{1}{2}$, there shall be the 1 deg. of *Taurus*, so where the Meridian 42, the Parallel 16 deg. where the 15 deg. of *Taurus*, and where the Meridian 106 cutteth the Parallel 22 deg. 41 min. there shall be the 15 deg. of *Cancer*: where the Meridian 122 cutteth the Parallel 20, there shall be the beginning of *Leo*: and so the other Meridians 137, 152, 166, cut the *Parallels* 16, 11, 5, for the 15 deg. of *Leo* in the beginning of *Virgo*, and the 15 of *Virgo*. These points being joyned by a Crooked Line, we shall have the portion of the *Eclipsis* for the Semicircles of the Boreal *Ecliptick*, whose points and degrees are easily noted in every sign, if that you take *Declinations* for every one out of the Tables, and *Right Ascensions*, by that Mode, by which we have signed the degree, the 15 deg. of *Taurus*, the 1 deg. of *Gemini* and the like.

This being done, the Composition of this Geographical Map is finished, which shall represent the half Superficies of the Earth, to wit, the part between the *Aequator*, and the Pole *Arctick*.

That this Mode is most easy and pleasant will be manifest from the Description, and the *Praxis* will shew it: now we shall speak of its use and inconveniences: we have said before that three things are required in a Map, or that they are made for a threefold end: The first of these, the Maps made by this Method do accurately enough discover, viz. the *Latitude* and *Longitude* of every place, because they are made from a Table of *Latitudes* and *Longitudes*: also they shew the distance of places from the Course or way of the Sun, or *Zones*. The second requisite, to wit, the due proportion of the Magnitude of every Region; Maps of this sort do not altogether perform, for Regions, by how much they are more near the *Aequator*, by so much the more they receive the greater place in this projecture, than they ought to have by their own proportion. But this difference is small, by reason of the great distance of the Eye, and this defect is compensated by that Commodity, that the places may the better be noted, by reason few Regions are inhabited about the Pole, but many towards the *Aequator*. But the third end, viz. the situation of one place to another, and the distance of places cannot be performed by these Tables, because the Lines, which note such places in the Maps, have another situation, and proportion, than in the Earth. But if you please to examine the situation of one place, to the situation of other places, and the rising and stay of the Sun above the Horizon of the same, the Horizon of that place may be drawn in an *Ecliptical* form in this Method: Let 90 degrees on both sides be reckoned in the *Aequator* from the Meridian of the given place, one of the terms of the Numeration shall one point of the Horizon to be drawn, viz. the Oriental point, in which the *Aequator* cutteth the Horizon. The other term again shall be the point of the Horizon for the *Aequi-*

Maps are made for a threefold end.

Few Regions inhabited about the Pole, but many towards the *Aequator*.

Equinoctial setting. Moreover in the opposite *Quadrant* of the Meridian of the place, let so many *Parallels* be accounted from the Pole towards the *Æquator*, as the *Parallel* of the place is distant from the *Æquator*. The term of the Numeration shall shew the third Point of the Horizon, *viz.* the Northern *Cardo*, (we shall shew how to find the Point of the South *Cardo*, in that which we shall annex by and by; if a greater portion than that of the *Hemisphere*, be to be represented on the Map, for it is not to be found in the *Hemisphere*, only except the Horizon of the Pole, which is the very *Æquator*). So we shall have three or four chief Points, through which the Horizon ought to pass. To find out the other Points, there is no more commodious way than by the benefit of the Globe, *viz.* let the Pole be Elevated for the *Latitude* of the place assumed; then in every *Parallel* let one Point be chosen, through which the first Meridian passeth, and let that be brought to the Meridian, which done, let the *degree* under the Meridian be noted, and so you must do in every *Parallel*. These being noted, let so many *degrees* be reckoned on both sides from every *Parallel* from the Meridian of the place given in the Map on the *Æquator*, *viz.* for 10th, 20th, 30th, and so on; and where the Meridians cut the convenient *Parallels*, they shall be the points demanded, to wit, through which the Horizon is to be drawn, and the situation of the other places may be examined in some measure at that.

By this Method the whole Superficies of the Earth may almost be represented on one Table, if that either of the Poles, *viz.* the *Antarctick* be assumed for the Eye, if a Table or Glass plain be taken of any *Parallel* near the Pole, for instance, the plain of the *Arctick* Pole, and the *Antarctick* Circle on one plain, neither doth any thing else remain to be done, or added to the former construction, but that the Meridian Lines should be protracted, and the *Parallels* drawn from the other part of the *Æquator*. Then let the whole *Ecliptick* be drawn, and if you please, let the Horizon be compleated. But seeing that the parts and *degrees* situated beyond the *Æquator*, towards the *Antarctick* Pole, by this Mode would become far greater, than the parts about, and in the *Æquator*, which is contrary to the truth of the matter, therefore it is better to make the projection on two *Hemispheres*, that one may shew the *Arctick* Orb, the other the *Antarctick*.

Tables described according to this Method are very few: to general Maps of Right Lines; two other Maps very small, described in this Method, are wont to be added, whereof one exhibiteth the Regions about the *Arctick* Pole, the other those about the *Antarctick*, which the Reader may look upon for the better understanding of what hath been said. But these are better learned from practice than from precepts.

The second Mode, the Eye being placed in the plain of the Æquator.

The preceding Mode of describing of Geographical Maps doth neither fitly shew the *Magnitudes* and situation of places, neither is commodious to describe the *Hemisphere* intercepted between the two Poles; and to represent all the places lying in the same Meridian: moreover it seemeth to be repugnant to our conception, that the Pole of the Earth should fall into the Center, and therefore those described Tables afford a more difficult imagination. Therefore another Method hath been found, which is somewhat more hard than the former, but more aptly representeth the places of the Earth, and removeth the Pole from the *Æquator*.

For the conceiving of this Method, we must understand the Superficies of the Earth to be cut into two *Hemispheres* from the whole *Periphery* of the Meridian, and in two Tables we exhibit those *Hemispheres*, one in one, the other in the other. The Eye is placed in the Point of the *Æquator*, which is removed 90 *degrees* from the first Meridian: the Table or Glass in which this representation ought to be made, is assumed; the place of the first Meridian and *Hemisphere*, (which lyeth beneath that Plain in respect of the Eye) is taken to represent it on the Plain. In this form of projection the *Semicircle* of the *Æquator* becometh

cometh a right Line, and that Meridian which is distant from the first 90 *degrees*, unto which the eye is conceived eminent, will also become the Right Line: all the other Meridians, and all the *Parallels* of the *Æquator*, become the *Arches* of the *Circles*, because their *Cones* are cut from the Plain of the Tables by a subcontrary Section. The explication of which must be demanded from the *Conical Doctrine*, and may better be shewed than expressed. But the *Ecliptick* becometh a portion of the *Eclipsis* for the Cause alleged in the former Method.

This Description is thus made: the point E, being taken for the Center in the Table, a great or small *Periphery* of the Circle is described, A B C D, (as we desire to have the Table great or small). This representeth the first Meridian, and its opposite, *viz.* the Diameter B D, being drawn, there arise two *Semiperipheries*, whereof one B A D, is the first Meridian; the other B C D, is the opposite, or of Longitude 180. This Diameter B D, representeth the Meridian 90 *degrees* distant from the first, and his point D, is one Pole, *viz.* the *Arctick*, but the point B, is the Pole *Antarctick*: the Diameter A C, to B D, is the perpendicular Line of the *Æquator*. Let these *Quadrants* A B, B C, C D, D A, be divided every one into 90 *degrees*. Moreover we must do thus for the representation of the Meridians; and *Parallels*, or for the finding out the *Arches* of the Meridians; and *Parallels*. First, the Line of the *Æquator*, A C, must be divided into its *degrees*, to wit, 180, (because it only sheweth half the *Æquator*) or A E, E C into 90, after this Mode: from the point D, let the *Semiperipheries*, right Lines, A B C be drawn to every *degree*, or which is as well, let the Rule be applied to the point D, and to every *degree* of the *Semiperiphery* A B C: these Lines shall cut the Line of the *Æquator* into 180 parts, which shall represent the *degrees*, which are the *degrees* of Longitude, and therefore the numbers 1, 2, 3, 4, and the like, must be ascribed, beginning from the first Meridian D A B. Through every one of these points, 1, 2, 3, and both the Poles B D, the *Arches* of the *Circles* must be described, which shall represent the Meridians. But how the *Periphery* must be described through these three given points, for Example, B, D, or B 2 D, and the like, is taught by Geometry, *viz.* you must find the Centers for every *Periphery* to be described, which Centers are placed in the very Line of the *Æquator*, as is the Center E, of the Meridian D A B. Those points are found according to Euclid's Method, Proposition 1. Lib. 3. if the Lines B 1, B 2, B 3, &c. be doubly cut by the perpendicular lines (this is most easy by the application of the Rule): where these perpendicular lines fall into the protracted Line E C of the *Æquator*, if there be need, there are the Centers for the describing of the *Arches*, B 1 D, B 2 D, &c. But the Centers of the *Arches* B 91 D, B 92 D, B 93 D, &c. fall into E A; if that need be to protract it. But the more easy invention in practice is, if that Right Lines be drawn from B, through every *degree* of the *Quadrants* B A, B C, even to the pretended Line A C, which make these points a, b, c, d, e, and the like. So that 1 A, shall be the Diameter of the Meridian through which the 1 ought to pass, and the 26 of that which passeth through the 2, and so the 3 c, 4 d, &c. if theretofore 14, 26, 30, 4 d, &c. be bisected, we have the Center of the Meridian to be described.

But the operation will be less obnoxious to error, and more easy (especially in great Maps) by a Canon of Tangents, for so we shall have no need to draw Lines. For to divide E A, E C, E B, E D into *degrees*, we thus act: we divide E B, in the opposite scale into 10000 parts. Then from the Canon we take Tangents $\frac{1}{2}$ degree, 1 deg. $1\frac{1}{2}$ deg. 2, 2 $\frac{1}{2}$, 3, 3 $\frac{1}{2}$, 4, and the like; and we put every one of these Tangents taken from the opposite scale in E A, E C, E B, E D, from E; so two near points shall contain one *degree*, the ascription must be made as before. Then at the Centers of every one of the Meridians to be found in E A, E C, the number must be taken from 90 *degrees* (or the very number from the Complement it self) let the Tangent of the residue be taken from the Canon, and be placed from E, in E C, or E A. The term shall be the Center of the Meridian to be described through the assumed *degree*. So we must

The description on Mathematically explained.

See Euclid lib. 3. Proposition 1.

The second Mode. See Scheme.

must do with all the Meridians. Practice will shew this to be easy. The foundation of this latter operation for the finding out the Centers, is a *Trigonometrical Theorem*. The difference of the *Tangents* of two *Arches* together filling up the *Quadrant*, is double to the *Tangent* of the difference of the *Arches*. So therefore the Meridians are represented.

To draw the *Arches* of the *Parallels*, the Meridian D B, must be divided after the same manner into 180 degrees, as the *Quadrants* of the *Aequator* E A, E C, if that occult lines be drawn from C, to every degree of the *Periphery* D A B: but there is no need of this, when those parts may be transferred from E A, into E B, the points or degrees from E, towards B, must be numbered from the *Aequator* to the Pole, 1, 2, 3, 4, and the like. So from E, towards the other Pole D.

Then through every one of these points, and degrees of the *Quadrants* of the like named number A B, C B, the *Arches* of the *Circles* must be described, viz. through the first degrees, then from the beginning of the third, and the like. And so from the other quarters of the *Aequator* towards D. So we obtain the *Parallels* of all degrees, and the *Polar Tropicks*, with their Meridians first found out.

To design the *Ecliptick*, there is a twofold Method, for we either put the situation of the *Ecliptick* on, or above the Earth, that his intersection with the *Aequator*, or the beginning of *Aries*, may hang over the place E, and in this situation the projecture of the Semicircles of the *Ecliptick*, from the 1 deg. of *Cancer*, to the 1 of *Capricorn*, on the Table is a Right Line: to wit, let the 23 deg. 30 min. be numbered from A, towards B, and let the Diameter be drawn through E, from the term of the *Numeration*. This shall represent the Semicircle of the *Ecliptick* in that situation. Which line shall be divided after the same Mode into degrees, as the *Semiquator* A C. For the point in the *Quadrant* B C, where the *Arctick Circle* falleth in, viz. 66 $\frac{1}{2}$ of a degree, is that from whence if that straight lines be drawn to every degree of the *Semiperiphery* F A D G, they shall cut E F into 90 degrees, and after the same Mode E G: to which the numbers, and signs of *Aries*, *Taurus*, *Gemini*, and so on, must be ascribed.

If the situation of the *Ecliptick* be put such that his intersection and that of the *Aequator* may hang over the place A in the first Meridian, then his projecture shall become a portion of the *Eclipsis*; whose two points are A, C; the third, that in which the Meridian 90 cutteth the *Tropick* of *Cancer*; the other points shall be found by the same Mode, which we have explained in the first Mode, viz. if that we have the *Declinations* and *Right Ascensions* of the 15 degree of *Aries*, the 1 of *Taurus*, the 15 of *Taurus*, and the like; where the *Parallels* of every one of the degrees of the *Declinations* cut the Meridians taken for every *Right Ascension*. Those points of the Sections are the 15 of *Aries*, the 1 of *Taurus*, and so on through those. Therefore if a Crooked line be drawn, we shall have the projecture of the *Ecliptick*, because it so remaineth continued in two *Hemispheres*.

Moreover to the ascribing of every one of these places in their *Tables*, *Longitudes*, and *Latitudes* must be excepted from the *Tables* of every place, and where the Parallel of *Latitude* of any place cutteth the Meridian of the *Longitude* of the same place, that point representeth that place on the Table, whose appellation is to be ascribed, and so all the places are to be designed.

After the same Method the whole Superficies of the Earth may be represented on one Table, if that the plain of the first Meridian be not taken for the *Glass*, but one Parallel to it, and that very near to the Eye; for so whole *Parallels*, and whole *Meridians*, or every continued Meridian may be described in their opposites. But thence there will arise a divers appearance from the true Superficies of the Earth, and therefore it is omitted by *Artificers*, who rather exhibit two *Hemispheres* on one Map. But it is useful that practitioners should exercise themselves in these. But then it will be more commodious to place the Eye in the first Meridian, so that B D may be the first; the line

A twofold Method for the designing the *Ecliptick*.

of the *Aequator* shall not be A C, but another drawn from the point of the right line E D, which shall be divided into so many degrees, as are in the *Arch* taken away by the same *Artifice*.

The second praise is, that it aptly exhibiteth the *Hemisphere* intercepted between the Poles.

The third is, that it almost sheweth the *Latitudes* and *Longitudes* of every place, and distance from the *Aequator*, and Pole, as they lie in the Earth.

The defects are, that first it hath unequal degrees of the *Aequator*, viz. in how much they are more near the first Meridian D A B, or the opposite B C D, by so much they are the greater, and therefore the equal Regions of the Earth in these *Tables*, are also made unequal, as in the preceding Mode (this defect may be in part corrected, if the Eye be removed far from the Earth): viz. the Regions about E are lesser, about A C greater than they ought by proportion to be: after the same manner the Regions about the Pole B, D are made bigger than they ought. Secondly, the situation of one place to another cannot be commodiously examined, neither thence can we find the distances of places.

The defects.

The third, fourth, and fifth Mode of Right lined Maps.

There are sold by *Artificers*, *Universal Geographical Maps* of *Right Lines*; viz. in which both the *Circles* of *Longitude* (*Meridians*) and of *Latitude*, (*Parallels*) are designed by *Right Lines*, which is impossible according to the Rules of *Perspective*; neither can there be any situation or position assigned to the Eye or *Glass*, that both the kinds of *Circles*, viz. *Latitude*, and *Longitude*, may become *Right Lines*, but either of the *Circles* may be represented by *Right Lines*. In the first Method, which we have explained of the Meridian or *Longitude* of *Circles*, *Right Lines* are made according to *Perspective*, and the *Circles* of *Latitude* become *Circles*, not *Right Lines*: but in the fifth Method following, the *Circles* of *Latitude* become *Right Lines*, but the Meridian *Circles* crooked *Ellipses*. In other Methods which are instituted according to the Rules of *Perspective*, both kinds become Crooked Lines, except yet in one Method, according unto which the Meridians become *Right Lines*, but the *Circles* of *Latitude* become *Hyperboles*, to wit, if the Eye be placed in the Center of the Earth, and beholdeth the *Hemisphere* from either part of the first Meridian; but the *Table*, or *Glass*, through which the aspect is made, becometh the plain Parallel to the first Meridian. For so the Meridians shall become straight lines, and the *Circles* of *Latitude* shall be *Hyperboles*. The division of the line of the *Aequator*, and of the Meridians according unto this Method into degrees is easy; and those who are delighted with the variety of these things may try this Mode with pleasure: but by reason of the description of *Hyperboles*, it is less fit for practice: therefore we shall say no more concerning it; those who will attempt it, let them use a Tutor. Therefore Maps of *Right Lines* are not made according to *Perspective*, but contrary to the same, as hath been said. They are found to be twofold, or of two sorts. Some account both the Rules of *Latitude* and *Longitude* equal, such as were made in times past: but others, as those which are now made, have the Rules of *Longitude*, or of the *Aequator* equal (which is contrary to *Perspective*) but not the degrees of *Latitude*, or of the Meridians. For they augment the *Magnitude* of these towards the Poles more and more; so that to 80 degrees, the degree is twice double more than to the *Aequator*, and then the degrees more near the Pole, may receive almost an infinite *Magnitude*, which cannot be expressed in any Map, which only readers contrary to *Perspective*, which only granted a small augmentation.

The 3d, 4th, 5th. Mode of Right lined Maps. See Scheme in Plate.

The Rules of *Perspective* necessary to be understood.

The Instructions of a Tutor good.

Right

Right lined
Maps.

Right lined Maps of the first Mode are the most easy of all others. For *Ab*, being taken for the *Longitude*, the Map is divided into 180, (for one *Hemisphere*) equal parts, which shall be *degrees*; and the Meridians, *viz.* Right perpendicular *lines* are drawn through every *degree*, and in these parts equal to them are taken, which are taken in the *line* of the *Aequator*, and right *lines* Parallel to the *Aequator*, are drawn through every part (which denote the *deg. of Latitude*) these shall be the *Circles of Latitude*. Any places shall be signed, as in the former Mode, *viz.* where the Meridian of that place, and the *Circle of Latitude* meet.

The second
Mode of Right
lined Maps.

Now the second Mode of Maps of right *lines*, in the division of the *Aequator* into equal *degrees*, differeth not from the former, and therefore the assumed *AB*, is divided into 180 equal parts (for either *Hemisphere*) as in the former, and right perpendicular *lines* are drawn through every one of them which design the Meridians or *Circles of Longitude*. But they observe another Method to the designing the *Circles of Latitude*, or *Parallels of the Aequator*. For the Meridians are not divided into equal *degrees*, but into unequal, as aforesaid, so that they encrease towards the Poles. The Cause is, because other Maps do not shew the true position of one place to the other, or rather a Nautical *line*, from one place to another, neither admit the finding out the distance, but they determine these two may be obtained by Maps of this kind. For because the Meridians are all drawn through the *degrees* of the *lines* of the *Aequator* equally distant one to another, thence it cometh to pass that the places or points situated in every Meridian, are so much the more removed above the true distance from the first Meridian, by how much they come nearer the Pole from the *Aequator*; *viz.* the distance in *Charts*, from the first Meridian, so much exceedeth the lawful distance, as the *Semidiameter*, or whole *sinus*, exceedeth the *Sine* of the Complement of *Latitude* of any place, so one *degree* or more to the *Circle of this Latitude*. And therefore the *degrees* in these *Circles* ought to be exhibited lesser than in the *Aequator*, and by so much the more lesser, by how much those *Circles* are more near the Poles. But in Maps of right *lines*, because the Meridians are drawn equally distant, they do not become lesser, but equal in all *Parallels*. How much therefore the *degrees* in every *Circle of Latitude*, are augmented above their due *Magnitude*, so much the *degrees* of *Latitude*, every one ought to increase in these Maps, above the *Magnitude* of one *degree* in the *Aequator*. That is done thus in this Method in designing the *Magnitude* in every *degree*: As the quantity of one *degree* in every Parallel is to the quantity of one *degree* in the *Aequator*, that is, as the *sinus* of the Complement of any Parallel beginning that *degree*, is to the whole *Sine*, so is the *Magnitude* of the part in the *Aequator*, which designeth one *degree*, to the *Magnitude* of the part which shall denote this *degree* in the Meridian, from whose beginning that Parallel is drawn. But if you will act more exactly, the *sinus* of the Complement of *Latitude* of any Parallel is not to be taken, but the *sinus* of the Complement of *Latitude*, which beginneth the *degree*, is, to be added to the *sinus* of the Complement which terminateth that *degree*, and half of the aggregated Complement must be taken for the first term in the Rule of proportion.

Example.

If a term be to be designed in the first Meridian for the first *degree* of *Latitude* in the *Aequator*, let the *Magnitude* of one *degree* of the *Aequator*, be of ten particles taken in the opposite Scale, according to the first Proposition his *Magnitude* shall become equal to the *deg. of the Aequator*; because the *Aequator* is the Parallel which beginneth this *deg.* but according to the II. Proposition, I take the *Sine* of the Complement 0 *degrees* of *Latitude*, which *Sinus* is 100000 (for the Complement is 90) and I add to the *Sine* of the Complement 1 *deg. viz.* to the *Sine* 89 *deg.* which is 99985, they become 199985, the

the half 99992. Therefore as 99992, is to 100000, so is 10 (the *Magnitude* of a *degree* in the *Aequator*, or an equal *degree*) to 10.0000 for the first *degree*. But because the increase above 10 particles is so small, that it cannot be noted in a Map; therefore this *degree* becometh of 10 particles, *viz.* equal to a *degree* of the *Aequator*. But in progress made towards the Poles, the *degrees* more and more increase. For Example; let the *Magnitude* of 66 *degrees* be designed, *viz.* which is between the term of 59 *degrees*, and the beginning of 61 *degrees*. According to the first Proposition, the time of the Complement of the 59 *degree* is 51503. Therefore as 51503 is to 100000, so is 10 to 19.4, particles must be taken for the Scale, of which a *degree* in the *Aequator* containeth 10.

According to the second Proposition thus we must do. The *Sine* of the Complement of the 59 *deg.* is 51503. The *Sine* of the Complement of the 60 *degree* is 50000, the half of the Aggregate is 50751. Therefore as 50751 is to 100000, so is 10 to 19.4. Which *Magnitude* is very little bigger than the former, neither is it worth the pains. Moreover when the *Magnitude* of the second solitary *degree* is found, it must be added to the *Magnitude* of the first *degree*: the Aggregate shall be the increasing *Latitude*, as much as is to be taken in the Meridian from the *Aequator*, for the term of the second *degree*. Then the found out *Magnitude* of the third solitary *degree*, must be added to the increasing *Latitude* of two *degrees* before laid down. So we shall have the *Magnitude* to be taken from the *Aequator* in the Meridian for the term of the third *degree*. And so you must do with the other *degrees*. Moreover that the labour may be more easy for the Studios, I have here set down a Table for the taking of the terms of every *degree* in the Meridian; I take such particles as one *degree* of the *Aequator* is put to have 100.

See Proposi-
tion 2.

Uu 2

The

See Prop. 1.

The TABLE.

The Table for
the taking the
terms of every
degree in the
Meridian.

	grad.		grad.		grad.
	term.		term.		term.
1	100	29	3032	57	6970
2	200	30	3147	58	7157
3	300	31	3263	59	7349
4	400 $\frac{1}{2}$	32	3347	60	7546
5	500 $\frac{1}{2}$	33	3499	61	7749
6	601	34	3619	62	7960
7	702	35	3740	63	8175
8	802	36	3863	64	8399
9	903	37	3988	65	8631
10	1005	38	4114	66	8872
11	1107	39	4241	67	9023
12	1209	40	4371	68	9384
13	1311	41	4502	69	9691
14	1414	42	4636	70	9943
15	1517	43	4772	71	10243
16	1621	44	4909	72	10558
17	1725	45	5053	73	10900
18	1830	46	5193	74	11243
19	1936	47	5338	75	11617
20	2042	48	5486	76	12017
21	2150	49	5637	77	12445
22	2256	50	5791	78	12908
23	2364	51	5981	79	13409
24	2473	52	6109	80	13960
25	2583	53	6274	81	14565
26	2694	54	6441	82	15243
27	2806	55	6611	83	16009
28	2918	56	6790		

The degrees of Latitude being so designed in the first Meridian, let Parallel lines be drawn through every one of them with the *Aequator*, which shall be the *Circles of Latitude*. And let the Inscription of every one of the places be in the point, where the *Circle of Longitude* and *Latitude* of the place do meet.

But the *Regions* about the *Poles* less aptly, and overmuch contrary to their natural disposition are exhibited in Maps of this kind, therefore the parts between the *Poles*, and the *Polar Circles* are wont to be adjoined to the *universal Map*, in two peculiar little *Maps* made according to the first Mode.

The use of these *Maps* is such. 1. The *Latitude* and *Longitude* of places is found, as in the preceeding. 2. The place A, being given from whence you Sail, and the place B, to which you Sail, the *quarter* is exhibited to which the Ship is to Steer her Course. For if a Parallel be drawn through A, and the Right line AB, the *Angle* which these two lines make shall shew

The use of
these Maps.

shew the *quarter*. Mariners use another Mode. 3. They would find the distance between two given places, if the interval of those two places be taken with a *Compass*, and transferred to the divided Meridian, so that the feet of the *Compass* may be equally absent from the Parallel, which is in the middle between these places. But these I think to be less exact.

The sixth and seventh Mode.

Ptolomy in the latter part of his last Chapter of his first Book of *Geography* proposeth another Mode, and teacheth by that to represent the part of the Earth then known: In this Method the *Aequator*, and *Circles of Latitude* become the *Arches* of the *Circles*: the Meridians become *Elliptical Arches*. The Eye is placed to hang over the Meridian, which is the midl between the extremities of the inhabited Earth; and in the middle place between the extreme degrees of known *Latitude*. But by reason of the inconveniencies of describing the *Ellipsis*, and because it was devised by *Ptolomy* more to represent part of the Earth, viz. that which is inhabited, therefore it is not used by *Artificers*. To this that Mode is something like, which exhibiteth *Circles* of *Latitude*, by *Right lines*: but the Meridians by the *semicircles* of the *Ellipsis*, such as the projection is, if you conceive perpendicular lines to fall from every point of either Hemisphere on the place of the first Meridian. But the Eye must be supposed to be removed by an infinite space from the Earth, so that all the Rays from the places of the Earth being drawn to it, may be accounted for *Parallels*, and *Perpendiculars* to the plain of the first Meridian, as *Dialists* say, that all the Rays emitted from some point of the Sun to the Earth do so little bend, that they may be esteemed for *Parallels*, and do make the same appearances in *shadows*. But it is not very difficult.

If therefore you intend to represent in this form the Hemisphere of the Earth, take any point in the plain E, and from that as from a Center let the Periphery ABCD be described, let the *Quadrants* be AB, BC, CD, DA; let every one be divided into 90 degrees, beginning from A C, towards B and A, B A D, shall be the first Meridian, B C D the opposite, in the right line B D, the middle between these is the 90 from the first B A D. Let them be drawn to A C, which sheweth the *Semiperiphery* of the *Aequator*; Right lines Parallel through every degree of the *Quadrants*, or *quarters*, they shew the *Parallels* of the *Aequator* or the *Circles of Latitude*, and the *Tropicks* and *Polar Circles* shall also be found out. The parts into which E B, E D is divided, through these that are drawn, are the Meridian degrees B D, which are noted, 1, 2, 3, and so on. The same are taken in the *Quadrant* E A, of the *Aequator*, and the *Quadrant* E C, and the number 1, 2, 3, are ascribed, even to 180, beginning from the first point, or next to the Meridian B A D. So the parts A E C shew the degrees, into which the *semiperiphery* of the *Aequator* is divided, through which the Poles B D, the *Semiellipses* must be drawn for the Meridians. Because through B D, is the greater Axis of *Ellipsis* which are to be drawn, but the *Semicircles* E B, or E D: but the Axis of the lesser *Semicircle* is various in divers, viz. part of E A, intercepted between E, and the degree of *Longitude*, and therefore from those given it is easy by an apt Instrument, to describe these *Ellipses*, which Instrument is vulgar at this day, neither is it difficult to make it. Yet the points of every one of the *Ellipses* may be easily found, through which they must be drawn with a free hand: but it is better to delineate them with an Instrument.

The *Circles* of the *Latitude*, and the Meridians being so described, all the places in this Map are to be ascribed at these points, in which the Meridian and *Circle of Latitude* do meet, and to the Map shall be finished. The *Ecliptick* shall be represented by a straight line, or by the *Ecliptick line*, by that Method which we have explained in Maps of the second Mode, with little labour.

Maps

See *Ptolomy* in
his latter
Chap. of his
first Book of
Geography.
See Scheme.

Maps of this Method are able to perform, what the *Tables* of the preceeding Modes do, besides this they have this Commodity, that they apparently shew the decrease of the *Circles* of *Latitude* in *Magnitude* towards the *Poles*.

If the *division* HG, and HK, cannot be made through the strokes of the *Lines*, by reason of the great distance of the Eye D, it will be easy by calculation to find out the *Parallels* for every *degree*, viz. according to this proportion: As the distance of the Eye taken from the *Center* of the Earth, with the *Sinus* of the *Complement* of the *Arch* of the *Equator* to be represented, have themselves to the *Sinus* of the same *Arch*, so is the distance of the Eye from the *Table*, to part the *Line* HC, or HK, which shall only represent the *Arch* of the *Equator*.

For Example, let us put the Eye D, to be removed from the *Center* of the Earth E, 200 *Semidiameters* of it: but the *Table* or *Glass* HK, 100 *Semidiameters*. Therefore DE, shall be 200, and DH 100, of such as EB, or EA, EC is 1. We shall find first the *Longitude* of GHK, which ought to represent the *Semiperiphery* of the *Equator* ABC, in this distance of the Eye or *Glass*. And it shall be thus:

As DE, is to EA, so is DH, to HS, or HK.

200 100 1 to the *Semidiameter* of the Earth $\frac{1}{2}$.
From whence it is manifest HK, or HG, ought to be of half the *Longitude* of the *Semidiameter* of the Earth, which in truth is over vast, when we can exhibit no such *Line* on any *Plain*. Therefore for the Earth it self, we conceive a little Earth, or *Globe Terrestrial*, lesser than usual, whose *Semidiameter* if that it be of 2 foot, HG, or HK, shall be of 1 foot, viz. if that the Eye be put 200 foot remote from the *Center* of that little Earth, but the *Glass* 100. But if you desire to know how much distance the Eye ought to be removed from the very Earth, that the *Semidiameter* of the *Equator* EA, or EC, may make the projecture HC, of given *Magnitude*; for Example of 1 foot, (the *Semidiameter* of the *Equator*, that is the *Semissis* of the *Axis* of the Earth containeth 19598300) that may be found by this proportion (yet supposing the distance of the *Glass* from the Eye, viz. HD, 10000.)

As HG, to DH, so EA, to DE.

1 to 100000, so 19598300 to 1959830000000 foot, wherefore 18000 makes an *Holland mile*, a vast distance. But in practice we take not the Earth its self, but its type, or little Earth, from which it is not necessary to suppose the Eye removed by so great an interval, but the projecture therefore is not varied.

The eighth Mode in which any given place in the Earth receiveth the Center, or middle place of the Map.

If you please to have a Map, in which the situation of all places to our place, or to any given place, as also the distance of them from our place, may be beheld, and found out, a Method is discovered, by which the Superficies of the Earth is so represented, that any given place of it may possess the middle place, or *Center* of the Map: and the other places may lie about it as a *Center*. Such Maps those people affect, who are delighted with a vain opinion, that their Country is situated in the middle of the whole Earth, as the *Chineses*, and likewise the *Jews* in times past.

But to describe such a Map, let us take London to possess the *Center* of the Map: we take his *Latitude*, or the *Elevation* of the *Pole*, to be the $51\frac{1}{2}$ degree, the Eye is placed in the point opposite to the *Vertex*, or in the *Nadir* of the place: the *Table*, or *Glass* is the *Plain* of the *Horizon*, or another Parallel to it; if you please to represent a larger portion than the *Hemisphere*, which is more commodious in this Method, to wit, that the *Plain* at least may pass through the depressed *Pole*.

There-

Therefore in the *Plain*, let the *Center* E, be taken for London, and the described *Periphery* ABCD, which sheweth the *Horizon*, must be divided into four quarters, and every one of these into 90 degrees: let the *Diameter* BD, be the *Meridian line*: B the *North Pole*, D the *South Pole*. And the *line* of the rising and setting *Aquinoctial*, sheweth the *primary vertical*. A, the *Occident*, C, the *Oriental* Canto, or sheweth the place which is distant 90 degrees in the *primary vertical point*. All the *vertical points* are represented in *straight lines*, drawn through the *Center* E, to every degree of the *Horizon*. But to shun confusion it is better to omit them, and to adjoin a *Circumductile Rule* to the *Taxil* affixed in E.

Then let BD be divided into 180 degrees, as in the former Mode, by drawing *Right Lines* from A, to every degree of the *Semiperiphery* BCD. That point in EB, which sheweth the 52 deg. of the *Arch* BC, shall be the projecture of the *Arctic Pole*. Let the point in ED, be noted with the letter P, which representeth the 52 deg. of the *Arch* DC, (by accounting from C, to D) shall be the projecture of the intersection of the *Equator*, and the *Meridian* of London. Let the letter Q, be noted, and from that towards the letter P, let the numbers of the degrees, 1, 2, 3, &c. be ascribed. Also from Q, towards D, and from B, towards P, viz. 52, 53, 54, 55, &c.

Then the points being taken from P, of the equal degrees, viz. 99 and 99, also 88, and 88; let these be described about these parts as the *Diameters* of the *Peripheries* of the *Circles*, which shall represent the *Parallels* or *Circles* of *Latitude*, and the *Tropicks*, and *Polar Circles* with the *Equator*.

To describe the *Meridians*, first, let a *Periphery* be described through the points APC: that shall shew the *Meridian*, which is 90 degrees absent from London. His *Center* shall be M, in BD, (protracted into the point N, which sheweth the *Antarctic Pole*). Let PN, the *Diameter*, be drawn through M, Parallel to AC, which is FH; protracted from both parts in K, L. Moreover let the *Circle* PHNF, be divided into 360 deg. and *Right Lines* from the point P, to every deg. (or only by application of the *Rule*) which shall cut the *line* KEHL. The *Circles* must be described through every point of the *Section*, and both the *Poles* P, N, as through three given points, which shall represent all the *Meridians*: the *Centers* of the *Arches* to be described are seated in the same KL, viz. those which are found by the former *Section*, but to be taken with this condition that the most remote *Center* at L, be chosen for the nearest *Meridian* from BDN, towards A, and for the second, the second from this.

The *Circles* of the *Latitudes*, and the *Meridians* being thus described, it is easy to inscribe the places of the Earth on a Map, and the situation of them all to London, will be conspicuous. Moreover to affix the *Rule* to the place of London, the same parts should be brought in, into which EB, was divided, and the number of degrees must be ascribed; so the *Rule* being brought round unto every place, we shall presently know, both how great an interval they lie from Amsterdam, and in what quarter they lie in respect of it. Now how by the benefit of the *Globe* such a Map should be made, we shall shew in the Fourth Mode of particular Maps.

The first Mode of Geographical particular Maps.

We have spoken of the making of *general* or *universal* Maps; now it is required that we should teach the composition of *particular* or *special* Maps. The parts therefore of the Earth, which we would represent on the Map, are either great or small; If great, as *Asia*, *Africa*, *Europe*, *America*; it will be necessary to institute a *Declination* according to the Modes explained for *General* Maps; but in divers parts sundry ways are more commodious. *Africa*, and *America*, because the *Equator* passeth through them, are not commodiously exhibited by the first Mode, but most aptly by the second, the Eye being placed in the *Plain* of the *Equator* above the middle *Meridian*, between the extremes which shut up *Africa*, or *America*. Therefore in these Maps the *Equator*

For the describing the Meridians.

Of particular or special Maps, as of Asia, Africa, Europe, America.

A Holland mile.

The Chineses and ancient Jews, supposed their Country to be in the middle of the Earth.

Aequator is a right line, but the Parallels and the Meridians are the *Arches* of the Circles. But to represent *Asia*, and *Europe*, the first and sixth Mode are more commodious, but for the *Polar Land*, or *Frigid Zones*, we have said that the first Mode is most apt in the explication of the same.

First, therefore a *straight line* must be drawn upon the Plain for the Meridian of the place, unto which we would have the Eye hang over, and that must be divided into *degrees*, according to the Method explained in the preceeding Modes, and which shall be *degrees of Latitude*, the number of which must be ascribed. Then from the *Table* must be extracted the *Latitude* of both Parallels, *viz.* that which terminateth the Region from both sides which representeth the Poles. The *degrees* of the *Latitude* of these must be noted in the right line, or the Meridian of the Eye, and through those *points* *straight* perpendicular lines must be drawn, which inclose the Map towards the *Northern* and *Southern quarter*. Then Parallels and Meridians must be drawn at every *degree*: and the places inscribed until the Map be perfected.

The second Mode of describing particular Maps.

Artificers are wont to use another Method in Regions not so large, but only moderate or small. First, a tranverse line is drawn in the extremity of the *Table*, for the Circle of *Latitude*, in which the ends of the Regions respecting the *Aequator*, are to be drawn; in that so many parts are taken equally, through how many *deg. of Longitude* that Region is extended from that part. Then from the middle of this line, a perpendicular is drawn, which hath so many parts as there are *deg. of Longitude* between the bounds of that Region towards the *Aequator*, and the Pole. But how great these parts should be, is known from the proportion of the *deg.* of the first Circle, which is greatest to the *deg.* of Parallel, which is represented from the lower tranverse line. Through the term of this perpendicular, another perpendicular, or Parallel to the inferior line, is drawn, in which so many *deg. of Longitude* must be taken as are in the lower line, and equal to them of the lower line; if these *Latitudes* be not much distant from the *Aequator*, or mutual from themselves. But if the distance from the *Aequator* be great; or if the excess of the ultimate *Latitude* of the Region be great above that which is more near the *Aequator*, the parts to be taken in the tranverse line, shall not be equal to the parts of the inferior line, but they ought to be lesser according to proportion, which the *degrees* of this more remote Parallel hath to the *degrees* of the inferior line, which proportion is known from the *Table* we have placed in the Fourth Chapter.

After the parts are thus taken for the *deg. of Longitude* in the superiour and inferior line, the right lines are to be drawn through the beginning and end of the parts of the same number: which right lines shall represent the Meridian lines. Then through every *deg.* of its perpendicular, which we have ordered to be erected from the middle point of the inferior line, lines Parallel to that lower line must be drawn through the beginnings of every *degree* which shall shew the Parallels of *Latitude*. In the last place, places must be inscribed at the points, in which the Parallels of every place, and the Meridian of *Latitude* do meet. So a *Geographical Map* for a given Region shall be completed.

The third Mode of describing particular Maps.

In representing the *Provinces* of a small tract, we use another Method, which we have explained before, *viz.* that the Maps may more accurately exhibit the situation of one place to another, and the distance of places. The Method consisteth in this, that we may find the *Angles* of the position of one place to another by *Mathematical Instruments*, and then aptly transfer into the *Chart*. For *Example* sake, let there be Five places of any Region to be disposed in the *Table* according to its situation and distance; we shall call those

Five

Five places A, B, C, D, E. First, we shall chose from these that A, from which the rest or most of them may conveniently be beheld; and an *Instrument* being applyed, we shall observe the *Angles of position* at every place, *viz.* the *Angles* between the Meridian line of the place in which we observe, and between the *quarters* of the other places B, C, D, E. Moreover in the *Chart* in which we will represent those places, we may take the letter A, and cut the *Periphery* described from thence into *degrees*, (which is not necessary if we have a Semicircle divided, or some other *Geometrical Instrument* fit for that purpose;) we shall assume one *Diameter* for the Meridian line of the place A, *viz.* F A G: the other perpendicular to this H A K, will shew the *Aequinoctial* rising in the extremity H, the setting K: F is the *Northern Quarter*, C, the *Southern*. Let the *Angle* of the position of the place B, to A, be observed of 30 *deg.* from the *South*, towards the *East*, we shall number in the *Quadrant* G H, so many *degrees*, and shall draw the line from A, through that *degree*. This shall represent the place B, from the place A. After the same Mode the *quarters* of the other place D E, must be noted on the *Chart*, if they be observed. Then another place is to be chosen from B, C, D, E, whose distance from A, is known, or found out; for *Example*, the place B, and in that the *Instruments*, being applyed, the *quarters* observed of the three other places C, D, E. This being done, we put in our *Table* the Scale of *miles*, or *Leagues*, which we take either greater or lesser, as we desire to have either a greater or lesser Map, and in the Line of the *quarter* of the place B, we take from A, the noted distance, and there we mark the place B, and through B we shall draw the Line Parallel to F G, which shall represent the Meridian of the place B, and in the *Periphery* described about B, as about A, we shall draw Lines from B, which will denote the *quarters* of the places C, D, E, and where these Lines cut them, which are drawn from A, the points of the Interfection shall be the places of the C, D, E, and we must do after the same Mode if that there shall be many places.

The fourth Mode which applyeth to the Globe.

We may by the help of the *Terrestrial Globe*, exhibit on a plain the situation and distance of places remote from one to another, and of divers Kingdoms; yea the whole Superficies of the Earth: so that any place given may seem to occupy the middle, as we have shewed in the sixth Mode: so that this Mode may be reckoned to the Modes for *General Maps*: but it is better not to extend the Mode beyond the *Hemisphere*. For distance I determine to set down before your Eyes on a *Chart*, the situation of all the places to London, and their distance from this place. First in the *Chart* let the middle point be taken for London, let the letter A, be noted; from that let the *Periphery* F H G K, be described. Let F G, be the Meridian Line, or the Line of the North, and South: let H K, be the Line of the East, and West: P, may shew the North, G, the South, H, the East, and K, the West. Let every one of the *Quadrants* be divided into 90 *degrees*. Then in the Globe let London be brought to the *Brazen Meridian*, and let the Pole be Elevated according to the Latitude of London; let the *Quadrant* be affixed to the Vertex, and applyed to every place, whose situation we would represent to London on the *Chart*. For *Example*, the beginning, middle, and end of *Frydice*, so to the bounds of Italy, Spain, Hungary, Sweden, and the like; and let the *Angles* be noted which the *Quadrant* maketh with the Meridian in every application; that is the *Angles* of the Position of those places to London: moreover the *degrees* of the *Quadrant* between London and every place, that is the distance of every one of them. This done, lay aside the Globe, and on the *Chart*, let the Lines be drawn from A, for the *quarters* of every one of the places, *viz.* which may make such *Angles* with the Meridian Line, as are noted before, and that between the Cardinal noted points. (How we may supercede this labour of drawing of Lines, we shall shew anon) In these Lines of the *quarters* the points must be found out for the places, by taking the distances from London,

X x

which

The second Mode of particular Maps.

See Chap. IV.

The third Mode of particular Maps, as Provinces, &c.

The fourth Mode by the help of the Terrestrial Globe.

which we may do by a double Method. For the places are either removed a little interval, which we will note, or by a large interval, but so it is best to make a small Map; or the places are removed a great interval, and so you must form a Map of a greater bulk. In the two Cases it is sufficient to make a Scale of degrees, by dividing some Line into equal parts, every one of which may represent a degree. From this Scale we take the distances of every place before noted, with the interval of the Compass, and bring them into the Line of the quarter of every place. The term shall be noted with the appellation of the place. And so we shall note all the places in the Table about London.

A Scale of equal parts for Degrees not sufficient for larger Maps, with remote Regions.

But if you must make a Map of a larger form, and the remote Regions must be noted, it is not sufficient to take a Scale of equal parts for degrees, but the Line must be divided by another Mode, viz. according to the Rules of Perspective; because in this Mode we place the Eye beneath the Horizon of London, in the place of the Antipodes, and take the Horizon for the Glass. If we are minded to represent an Hemisphere, or a part greater, lesser than the Hemisphere, then we take a Plain Parallel to the Horizon, which may be distant from it by so great an Arch, as is the part to be represented by the Hemisphere. Therefore let the Periphery of the Circle be described in another Chart, M, the Center, N O, one Diameter, P Q, another perpendicular. Let the Quadrant P Q, be divided into 90 degrees, and let so many degrees be taken beneath Q, as much as the part beyond the Hemisphere is to be represented, and through the term R, let it be drawn to Q M, Parallel at M O, to wit, R S.

Moreover from O, let right Lines be drawn to every degree of the Quadrant N Q, or N Q R, (if a greater portion than the Hemisphere be to be exhibited) which divide the right Line M Q, or S R, into such parts, which in perspective shall shew the degrees. Then let a Line be taken, how much we will have to be the distance of the most remote place from London in the Table, that is how much we will have to be half the Table. That Line shall be divided as M Q, or S R, was divided: and the parts shall be noted with numbers, 1, 2, 3, 4, 5, 6, &c. for degrees. The distances taken from this Scale for every place from London, if they be brought into the Lines of the Quarters, shall exhibit the points for the places, and the Map shall be made which we desired.

In the practice we may supersede from the pains of the Lines to be drawn from the Quarters, for it will be commodious to design a Scale of degrees in the Rule, whose beginning if it be applied to London, and the Rule be brought round to the degrees of the Periphery for the Quarters of every place, the point may presently be noted for any place, accounting the distance on the Rule from the beginning of the Scale. The practice will shew this Method easy.

The fifth Mode, concerning Sea Maps, or Charts.

The fifth Mode treating of Sea Maps, or Charts.

Sea Maps, or Charts, are of right Lines, and have all their Meridians Parallel, otherwise than the second Mode hath in the last member. They are twofold, as we have said, that Universals are twofold in the fourth and fifth Mode of universals, viz. of equal degrees of Latitude, or unequal degrees. The construction is the same with that of the universals, the difference is only that they represent part, and admit of divers Nautical or Sea Compasses. Of their use we shall speak in the Art of Navigation. Charts become of equal degrees, if that part of the Earth a little varying in Latitude, be to be represented: such are the Charts for the Navigation of the Mediterranean: they are made of unequal degrees, if that the Latitude be great.

CHAP.

CHAP. XXXIII.

Of the distance of Places.

Proposition I.

Two Points, or Places being given on the Globe, to draw a line or Arch from one to the other, which may be part of the greatest Periphery of the Globe, or to describe on the Superficies a Periphery of the greatest Circle, which may pass through the two given Points.

Let us conceive two Right Lines drawn from one point to the other, and from both to the Center of the Globe, or Earth, which three Lines shall make a Triangle, and therefore they are on one Plain. This Plain pretended may cut the Superficies of the Globe: the Section shall be the Periphery of the greater Circle, and the Arch intercepted between both places shall be that sought for. Or let the interval of the Quadrant of the greatest Periphery be taken with the Compasses, and one foot being fixed on one of the given places, let the Arch be described on the Superficies of the Globe: then the other Arch, the foot being fixed on the other given point, the Cannon Section of these two Arches, shall be the Pole of the Periphery to be described, or in which if one foot of the Compass be designed, and the Periphery described on the Superficies of the Globe, we shall have the Arch demanded intercepted between the two given places.

Conceiving the distances of places.

Proposition II.

The distance of two places on the Superficies of the Earth is very short, or the shortest way from one place to the other is only one (except the places of the Antipodes) viz. the Arch of the greatest Periphery, which is intercepted between those two places.

The shortest distance of these two points, is a Right Line drawn from one point to the other, as is manifest from the definition of Archimedes, and it is easy to deduct from other definitions. Also the shortest distance of two places existing in the Superficies of the Earth is a Right line, which is conceived to be drawn from one place to the other; but seeing that the Superficies of the Earth is a crooked Convex, thence it cometh to pass, that the Right Line which is truly the shortest distance of the two places, may fall between the Cavity of this Superficies. But we consider only those ways from one place to another, which are on the very Superficies of the Earth, and therefore Crooked Lines: wherefore we add in the Proposition the shortest distance on the Superficies of the Earth. Between these ways, or intercepted Lines, there is one which is shortest of all, viz. the Arch of the greatest Periphery, intercepted between any two points so drawn, as we have said in the preceding Proposition. That therefore this Arch, or Crooked intercepted Line is shorter than all the other Crooked Circular intercepted Lines (of which there are infinite) is manifest from this Geometrical Theorem: if the Arches of two unequal Peripheries be taken, whose subtended Line is equal, or the same, the Arch of the greater Periphery shall be lesser than the Arch of the lesser Periphery of the Earth, except that Arch which is supposed to be of the greatest Periphery. But that this Arch is also lesser than the other Crooked not Circular solid Lines, (as the Helices) such as may be infinitely supposed on the Superficies of the Earth intercepted between two places is shewed from others: for this Theorem doth not belong to Geography but to Geometry, which

The shortest distance of two places, is a Right Line drawn from one point to the other.

X x 2

which also sheweth only that one *Arch* of the greatest *Periphery* may be drawn from one place to another, not many.

Proposition III.

The distances of places are not changed.

The Itinerary distance of places may sometimes be greater, and sometimes lesser: but the true and shortest *Geographical* distance remaineth the same, except you conceive the *Superficies* of the Earth to be rent or torn. But here we understand places to be the *points* of the Earth which are immovable, and therefore the *Superficies* intercepted between two places become higher, the distance of the places shall also be made greater; if more depressed, lesser.

Proposition IV.

No Maps of the Earth are distant a greater interval, than 2700 German miles, whereof 15 are said to be a degree.

Therefore because the *Superficies* of the Earth is *Spherical*, the shortest *Arch* cannot fall between two *points* of it, which is greater than 180 deg. that is, than the *Semiperiphery* of the greatest Circle. And 180 deg. makes 2700 German miles; wherefore no places are distant more than 2700 German miles. But the condition of an Itinerary distance is otherwise.

Proposition V.

The distance of the Antipodes is 2700 German miles, or 180 degrees.

The shortest distance amongst the *Antipodes* is not one, but infinite, and those all equal, although to speak properly, they cannot be called the shortest distances, but those than which none are shorter.

The Circular distances amongst the *Antipodes* are all greater *Peripheries*, no lesser, of which between other places there are infinite, which are not opposed to the *Diameter*.

A *Periphery* passing through two places, also passeth through the *Antipodes* of these places.

The distance of any places of the two which belong to the *Antipodes* taken together, make 180 degrees. Therefore the distance of one place being known from the other, the distance also of that place shall be known from the place of the other of the *Antipodes*.

These five Propositions are of so manifest a truth, that any one weighing of them may easily discern, and understand them.

Proposition VI.

Any place being given on the Superficies of the Globe, to exhibit all those places which may have one and the same distance from that given place; but the given distance must not be greater than 2700 German miles.

Let the given place be brought to the *Brassen Meridian*; let the Pole be Elevated according to to the *Latitude* of the place, let the *Quadrant* be affixed to the *Vertical point*. Moreover let the given distance be turned into degrees, which degrees must be numbered on the *Quadrant* from the *Vertical point*. Let the term of the Numeration be noted with Chalk: then let the *Quadrant* be brought round on the *Superficies* of the Globe: the noted point will shew all the places of the Earth, which have the given distance from the given place.

Or

Or let the *deg.* of the changed distance be taken on the *Aequator* by the interval of the *Compass*, and one Foot fixed on the given place; let the other be brought round. The places through which it passeth are those demanded. But if the *deg.* arising from the changed distance are more than 90, that is than a *Quadrant*, let the *Complement* be taken at 180; and let the place of the *Antipodes* be brought to the *Superiour Semicircle* of the *Brassen Meridian*, let the Pole be Elevated for its *Latitude*, and the *Quadrant* affixed to the *Vertical point*, and let the *deg.* of the *Complement* be accounted on it, and let the term of the Numeration be noted with Chalk. If then the *Quadrant* be turned about, all the places demanded, which have the given distance from the given place, shall have the noted point. But if you will do the business with the *Compass*, use the Method of the *Chorographical Maps*.

Proposition VII.

Of the Cause why the Itinerary distance is greater than the true, or short and Geographical.

1. The unpassable Woods which lie between some places. 2. High Mountains, and low Valleys. 3. Marshes and Water in general, if you mean Land Voyages. 4. In Sea Voyages, the procurent Lands and Islands hinder the direct Voyage. 5. Peculiar Fluxes of the Sea. And 6. The Winds.

But some may demand whether it be not possible that there may be places whose Itinerary distance is lesser, than the most short *Geographical*? To this I answer, although to Sense the Figure of the Earth be *Spherical*, yet I have shewed in the first Book, that this Figure is not altogether *Geometrical*, but is rendered unequal by many places Elevated and depressed. Therefore if we conceive a certain *Superficies* of the Earth, or the distance of the *Superficies* from the Center, for Example, the vulgar *Semidiameter* of 860 miles, in respect of which places are to be taken Elevated, or depressed, this being supposed, I say, there may be two places so situated, that the Itinerary distance may be lesser than the shorter *Geographical*, which is removed 860 miles from the Center, but the intermedial place must be more depressed.

Proposition VIII.

To find out the distance of two places given on the Globe, as also in Geographical Maps.

Let one of the given places be brought to the *Brassen Meridian*; let the *Quadrant* be affixed to the *Vertex*, and let it be applied to the other given place: then let the degrees intercepted between the *Vertex* and this place be numbered: let these degrees be turned into miles, or another measure in which we would know the distance of those places; this shall be that demanded.

Or let the interval of two places be taken with the *Compass*, and this being translated to the *Aequator*, let it be considered how many degrees it possesse in this, for these are the distances of the places, which we must convert into miles, or some other measure.

But if that the distance be greater, than can be taken by the *Quadrant*, or *Compass*, (that is more than 90 degrees) the distance of one place from the *Antipodes* of the other, shall be lesser than 90 degrees. Let this be enquired after and taken from 180 degrees, the remaining degrees shall be the distance required.

In Universal Maps, as also in Particular of great parts, the distance of places cannot be exactly found: but in Particular *Chorographical Maps*, a Scale of Leagues or miles is usually added, by the assistance of which the distance of places contained in those Maps is known. For so if you take the interval of two

Itinerary distances of places may be greater or lesser.

Fifteen German miles makes a degree.

The distance of the Antipodes.

The reasons why the Itinerary distance is greater than the true, short, and Geographical.

The finding out the distance of two places given on the Globe.

two places, and transfer this into the Scale, you shall presently know the distance of those places.

But if the Map be of any greater proportion, this Method is defective, for no Map can be made by any Method, which exhibiteth the true distance of places: but such an one may be made, which may shew the distance of one place from all the rest, as we have said in our Method of making Maps.

Proposition IX.

The Latitude and Longitude of two places being given, to find their distance.

The Latitude and Longitude of two places being given, to find their distance.

The solution of this Problem is easy by the Globe and Catholick Planisphere; it is difficult by Calculation, and Trigonometrical Supputation.

It is performed on the Globe after this Mode: let any Meridian be taken, and let the difference of the Longitude of places be numbred from it in the *Aequator*; let the term of the Numeration be brought under the *Brazen Meridian*, and let the Latitude of the other place be reckoned on this; let the point of the Globe, which is under the term of the Numeration be noted with Chalk: also in the first Meridian, let the point of Latitude be noted for the other place. Then let the interval be taken between the noted points with the *Compasses*, and let it be transferred either into the *Aequator*, or first Meridian: so we shall know the distance of places in degrees, and parts of degrees: which degrees must be turned into miles, or other measure which we would have; but if the interval be greater than can be conveniently taken with *Compasses*, we must do as in the VII Proposition. But because the *Planisphere* is more apt for use, especially by *Seamen*, and many love to solve Problems by it, and the use of this Problem is frequent, I shall also propound this Method by the *Planisphere*.

There are two Cases of this Problem, for either the given Longitude of the places is one, and the same, or the difference of 180, to wit, if they lie in the same Meridian, or the Longitude is diverse. If it be the same, there is no need of another Method, but that difference of Latitude may be turned into miles; viz. that every Latitude is the distance of places in degrees: but if the Latitudes be of divers Species, to wit, one North, the other South, the degrees of Latitudes shall be added: if the difference be of 180 degrees, viz. if in divers Semicircles of the same Circle of Longitude, we must do after the same Mode, which is easy for any one to collect. But it is otherwise, if that the Longitude of the places be unequal, that is, if the places shall be situated in divers Meridians, and without the *Aequator*.

But it will be useful for the distinct understanding of the Problem to reckon the Cases which vary the solution, and most of them have a most easy solution, as will be manifest by Examples, which the Studious ought to examine.

1. If the Longitude of the places be the same, and they be the same cognominate Latitude, in this Case the difference of Latitude is the very distance in degrees, which may be changed into miles, or other measure.

2. If the Longitude of places be the same, but the Latitudes be of a divers name, one Northern, the other Southern; in this Case, the Latitudes shall be added in one sum, this shall shew the distance in degrees.

3. If the difference of Longitudes be of 180 degrees, and be of a like cognominate Latitude, the Complements of the Latitudes shall be taken at 90 degrees, or the distance of the places from the Poles; and they shall be added: the same will shew the distance in degrees.

4. If the difference of Longitudes be of 180 degrees, and the Latitudes be of a diverse name, let the difference of Latitudes be taken, and subtracted from 180 degrees, or the Semicircle. The remaining number shall exhibit the distance in degrees.

5. If both places shall be in the *Aequator*, the difference of Longitude is the very distance.

6. If the Latitude of places shall be one and the same, and not greater than 20 degrees, and the difference of Longitude small, we must enter with that Latitude, the Table of Magnitude laid down in the IV Chapter, and we must except the quantity of one degree. Then we shall take the difference of Longitude, and turn these deg. into the excepted Miles, or Measures.

7. But if the Longitude and Latitude be divers, or if the Latitude be the same, but yet greater than 20 degrees, and the difference of Longitude be some what greater, which is usual in many Examples; in this case we must not use the same compendiums, but the solution is more difficult, and in this case the Problem is chiefly propounded. We have shewed the solution by the Globe; the Method by the *Planisphere* is this: let the Rule of the *Planisphere* be brought to the Latitude of one place, or to the degree of the Elevation of the Pole: then let the difference of Longitudes be numbred in the Meridians, beginning from the other part, and wherein the point may be observed, where this Meridian terminating the Numeration, cutteth the Parallel of the other place of Latitude. Let the end of the Index be placed above this point. This done, let the Rule be applied to the Line of the *Aequator*. The number of the Parallels intercepted between the Pole and the Index, is the sought for distance in the degrees.

Thus the Problem is solved by the *Planisphere*. There is another Method found out by *Maurolicus*, which by the strokes of the Lines on the Circle, teacheth by a pleasant operation to exhibit the distance, from which lineary description also is deduced a Mode, in which the Problem is solved by Calculation. Let a certain Periphery of the Circle be described in the Center E: one Semiciameter BE: let the Arch BA, be taken equal to the difference of the Longitudes of the places (if the difference taken be greater than 180 deg. the Complement of this difference is at 360 degrees) and let the Semiciameter AE be drawn. Then let the Arch AF, (towards B) be taken equal to the Latitude of the place A, and from B, the Arch BC, equal to the Latitude of the place B: let GI, be let down perpendicular from G, on BE, and FH, from F, on AE. Let IH, be drawn, and above this the points I, and H, must be erected perpendicular, IL, equal to IG, and HK, equal to HF (on the same quarter if the Latitudes of the places shall be Cognominal; but if they be of a divers Name, then IL, shall be drawn from one quarter to the right Line IH, and HK, from the other). This done, the right Line LK, shall be stretched to the demanded distance, or the Arch of it shall be subtended, which shall shew the distance of degrees. Therefore by the interval of the Compass KL, let the Arch BX, be taken: this shall represent the distance in degrees.

This Mode of *Maurolicus* is taken from the solution of Spherical Triangles, neither will this lineary Method exhibit an accurate distance, although the practice be pleasant and easy: but only the Method by Numbers, or the Trigonometry of Spherical Triangles, exhibiteth an accurate distance. For let there be had a Spherical Triangle, in which two sides are given, viz. the distances of the places from the Poles (the Complements of Latitude) and the Angle contained whose measure is the difference of Longitude, the third side is demanded. For the finding of which although there are many Methods, yet the most general is this: First, if that the Latitudes of places be Cognominal, let it be brought to pass, that as the Quadrant of the whole Sinus is to the right Angle, contained under the Sinus of the distance of the places from the Pole, so is it towards the Sinus of the difference of the Longitudes (if it be greater than 180 degrees, let his Complement be taken at 360 degrees) to a certain fourth number. Then let the difference of Latitudes be taken, and the Sinus of this Complement. Moreover let the fourth number found out before be compared with this Sinus: if it becometh equal, the distance of the places shall be 90 degrees. If it be lesser let it be subtracted, and the residue shall be the Sinus of the Arch, whose Complement is the distance of the places. If the fourth be found greater than the said Sinus, let this be subtracted from that, and the residue

The solution of the Problem.

See Proposition 7.

Cases which vary the solution of this Problem.

side shall be the *Sinus* of the *Arch*, which being added to 90 *degrees*, will exhibit the distance sought in *degrees*, which must be converted into an Itinerary distance.

2. If the Latitudes be of a divers name, *viz.* one *Northern*, the other *Southern*, let the place of the *Antipodes* be taken for either place of it, and the distance of it may be found from the other place according to the said Method. For the Latitude of this shall be the same with that of that place, but of the same name with the other place: therefore in a *Spherical Triangle* there shall be two given *sides*, and the *Angle* is the *Complement* of the difference of the Longitude of the places at 180 *degrees* (or an excess above 180; if this difference shall be greater than 180) therefore the distance between one place, and the *Antipodes* of the other place being found, you have also the distance of those places. For this is the *Complement* of the former to 180 *degrees*, as hath been said in the former *Proposition*.

In places near, and not much distant from the *Aequator* (*viz.* not beyond 18 *degrees*) we use a more easy, though not an Apodictical Method, which shall exhibit a distance not much diverse from the true, *viz.* we take the *Quadrant* of the difference of Longitude, and also of Latitude, we add the *Quadrants*, and from the Aggregate extract the *Quadrant Root*, this will shew the difference not much different from the true.

Or thus, act in a more certain Method, which may also be applied to places beyond the 20 *degree* of Latitude: from the *Table* of the Quantity of the *Parallels*, except the proportion of the greater *Parallel* of Latitude to the *Aequator*: and as the quantity of the *Aequator* is to the quantity of the *Parallel*, so is the difference of Longitude to the other, or to the difference of Longitude taken in the *Parallel* of a greater Latitude. Let this quantity be assumed for the difference of Latitude, and do as before.

The solution of this *Problem* is easy, if we apply *Tables* of *Logarithms*, and resolve a *Triangle*, *Oblique Angle*, into two right *Angles*. So there will be need of no *Multiplication*, or *Division*.

Proposition X.

The Latitude of two places being given, and the Quarter in which one is situated from the other, to find the distance.

This *Problem* is the same with the *Trigonometrical abstract*: two sides being given in a *Spherical Triangle*, and an *Angle*, which is opposite to one given side, to find a third side. For the two given sides are in this *Geographical Problem*, the distances of these two places from the Pole, and the *Angles* opposite to either side is the *Angle* of position, or the *Angle* of one quarter of the place to this other, or the *Complement* of this *Angle* at 180 *degrees*.

The Solution of this *Problem* is thus performed by the Globe. Let the first Meridian be taken for the Meridian of the place, whose quarter is not given at the other; and in this Meridian let the point of Latitude be noted for this place. Then let the Pole be Elevated for the Latitude of the other place, and the *Quadrant* affixed to the *Vertex*, but let the other end be applied to the quarter or degree of the Horizon, for the given quarter.

Then let the Globe be turned round, until the point noted in the first Meridian come to the *Quadrant*. So the *Arch* of the *Quadrant* intercepted between the *Vertex* and that point, is the demanded distance of the two places: you shall also have the difference of Longitude in the *Aequator*, *viz.* the *Arch* of the *Aequator* intercepted between the *Brazen*, and first Meridian.

Pro-

Proposition XI.

The Longitude of two places being given, the Latitude of one place, and the quarter in which this other place lyeth at this, to find out the distance.

Here we have again a *Spherical Triangle*, whose sides are the distances of the places from the Pole, and the mutual distance of the places themselves; in which one side is given, *viz.* the distance of one place from the Pole, and two *Angles* are given, one, whose measure is the difference of Longitude, the other is known from the given quarter of the other place. From these three given the side is demanded, which is opposite to the *Angle* of the difference of Longitude, the solution may easily be performed by the Globe, and by the *Planisphere*; and very exactly by a *Logarithmical Calculation*, as also by the common computation. We will only shew the Method which the Globe affordeth, although it be more easy by the *Planisphere*, but that which is done by the Globe representeth the *Triangle*.

Let the first Meridian be taken for the Meridian of the place whose Latitude is not given: and let the *degrees* of the difference of the Longitude of the places be accounted in the *Aequator*. Let the term be noted with Chalk, and brought to the *Brazen* Meridian: so this shall represent the Meridian of the other place: let the *degrees* of the given Latitude be reckoned on it, and the Globe remaining fixed let the Pole be Elevated for that Latitude: Let the *Quadrant* be affixed to the *Vertex*, and the other end to the given quarter of the Horizon. In this situation of the Globe the point in which the *Quadrant* cutteth the first Meridian, shall represent that other place, and the *Arch* of the *Quadrant*, which is intercepted between the *Vertex*, and the point is the distance demanded. Also by the same Method, the Latitude of this other place is had.

The Method which the Globe affordeth herein.

Let the first Meridian be taken for the Meridian of the place whose Latitude is not given.

Proposition XII.

The distance of two places situated in the same Meridian, or of the same Longitude, being given in the quarters in which that third place lyeth from those two, to find the distance of this third place from both of them.

Here again we have a *Spherical Triangle*, whose three sides are the distance between those three places. And one place is given, *viz.* the distance of two places (which must be turned into *degrees*, except it be so given) and the two adjacent *Angles* are given, the two other sides are sought.

Leaving the Methods which perform it by Calculation, and the *Planisphere*, although they be more accurate, we shall only deliver that which solveth it by the Globe, and placeth it more before the Eyes.

Let the *degrees* of two places distant be taken on the *Brazen* Meridian where you please, and let the terms be noted: so that these may represent the places whose distance is given. Then let the Pole be Elevated for the Latitude of one of these terms, let the *Quadrant* be affixed to the *Vertex*, and applied to the given quarter, in which the other place is situated at the place which is represented from that bound, and let the extension of the *Quadrant* be noted with Chalk on the Globe. Then let the Pole be Elevated for the Latitude of the other bound, and the *Quadrant* be affixed to that term, the other extremity to the other given quarter. The point in which the *Quadrant* shall cut the *Arch* marked with Chalk, shall represent the third place, whence it is easy to take the distance from these two terms.

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CHAP.

CHAP. XXXIV.

Of the Visible, or Sensible Horizon.

A Sensible Horizon, is a *Periphery* on the *Superficies* of the *Earth* which boundeth the prospect of the *Eye* moved round about, or which terminateth part of the *Superficies* which the *Eye* moved about may see, or from whence the *Rays* may come to the *Eye*. His *Semidiameter* is termed the greatest *Arch* of the *Earth* intercepted between the *Foot* of the *Spectator*, and that *Periphery*, which therefore is perpendicular over it.

Proposition I.

The extension or *Semidiameter* of the *sensible Horizon* variously existeth both according to the divers *Altitude* of the *Eye*, as also from the diversity of the taken *Semidiameter* of the *Earth*.

A sensible Horizon what.

Let the greatest *Circle* of the *Earth* be *MPNQ*. Let *T* be the *Center*, *TP* the *Semidiameter*, *PO* the *Altitude* of the *Eye*: let *O* be the *Eye*. Let the *Tangents* *ON*, *OM* be drawn from *O*: and let us conceive the *Ray* *NO* to be as it were carried about on the *Superficies* of the *Earth*: and so to describe the *Periphery*: this shall be the *sensible Horizon*: his *Semidiameter* *PN*, *PM*; for the *Rays* *NO*, *MO* are the last, which from *O* can come to the *Eye* from the *Superficies* of the *Earth*, which we here suppose to be perfectly round.

And it is manifest, if we take the lesser, or greater *Altitude* than *PO*, that also the *Arch* *PN* shall be greater or lesser. After the same Mode if *FP* be made to be of more, or fewer *miles*, *PN* shall also be of more or fewer *miles*.

The opinions of the Ancients concerning this Horizon.

These seem to be the *Causes*, that the *Ancient Authors* have followed divers opinions concerning this *Horizon*, or *Extension* of *Sight*. For *Macrobius* assigneth to it the *Semidiameter* *PN* of 180 *stadia's*, that is 22½ *miles*; *Eratosthenes* 350 *stadia's*, which makes 44 *miles*. *Alberius Magnus* 1000, which makes 12½ *miles*. *Proclus* 2000 *stadia's*, that is 250 *miles*. Many assign 500 *stadia's*, that is 62½ *miles*. Yet I suppose the *Causes* of the diversity of these assignments, not only to be those of which I have spoken, but the divers assumed distance of the *stadia*, as shall be manifest from the following *Proposition*.

Proposition II.

The stature of a *Man* being given from the *Foot* to the *Eye*, and the *Semidiameter* of the *Earth* being given, to find out the *Semidiameter* of the *sensible Horizon*.

Let *PO* be the stature of a *Man*: *O* the *Eye*. *TP* is the *Semidiameter*. *ON* is the *Rays* touching the *Superficies* of the *Earth*, terminating the *sensible Horizon*, or the *Aspect*: therefore *PN* is the *Semidiameter*; the *Longitude* of this is demanded. Let *PO* be added, for Example, of Five *Foot* to *TP* the *Semidiameter* 19598300: so you shall have *TO*, and in the *Triangle* *NTO* besides *TO* and *TN*, we know the *Angle* *TNO* to be right, or 90 degrees. Therefore *NTO* is found according to this proportion.

As

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As *TO* is to *TN*, so is the whole *sinus* to the *sinus* of the *Angle* *NOT*, whose Complement at 90 degrees is the *Angle* *NTO*, or the *Arch* *NP*, which may be turned into *miles*.

Corollary. We therefore may thence know what if this, or that quantity of the *Semidiameter* *TN*, or *TP* be taken, and another *Altitude* of the *Eye* *O*, how great a variation there thence is of the *sensible Horizon*.

Proposition III.

The *Altitude* of the *Eye* being given on a *Tower*, or *Mountain*, to find the distance of the last point, unto which the *Eye* extendeth it self, or which the *Eye* can see.

Let *PO* be the given *Altitude* of the *Tower*, in which the *Eye* being placed beholdeth all round. Therefore in the *Triangle* right *Angle* *NTO*, the given have themselves after the same Mode, as in the preceding *Problem*. Therefore the *Angle* *NTP* and the *Arch* *NP* shall be found after the same Mode, which we have used in the solution of the former.

Proposition IV.

The *Semidiameter* of the *sensible Horizon* being given, or the greatest distance from which the *Eye* is supposed to see, to find out the *Altitude* of the *Eye*.

This is the same with that *Problem*. The greatest distance being given from which the *Vertex* of the *Mountain* is seen, to find the *Altitude* of the *Mountain*.

In the *Triangle* *NTO*, let the right *Angle* *TNO* be given, and the *Angle* *NTO* is known from the *Semidiameter* of the *sensible Horizon* *PN*: moreover let the *Semidiameter* of the *Earth* *TN* be given. Therefore *TO* shall be found according to the proportion.

As the whole *sinus* is to the *secant* of the *Angle* *NTO*, so is *TN* to *TO*. From which if you subtract *TP*, the remaining number will shew the sought for *Altitude* of the *Eye*.

Proposition V.

The *Altitude* of the *Eye* being given, and of some erected *seam* *Magnitude*, as a *Tower*, the *Mast* of a *Ship*, or an high *Mountain*; to find the distance of this from the *Eye*, that is the distance of the *Ship*.

For Example, in the *Diagram* in the preceding *Propositions*, let *PO* be the *Altitude* of the *Eye* in the *Ship*, *Tower*, or *Mountain*. Let *FS* be the *Mast* of another *Ship*; and let *P* be the point, and *FS* the *Ship* seated, that in *P* the first top of the *Mast* smoy be seen. Therefore the point *S* shall be in the *Line* *ON*, which is the *Tangent* drawn from the *Eye* *O*: for whatsoever is seated beneath this *ONX*, that can send forth no direct *Rays* to the *Eye* *O*: but it must so draw near, that the *Vertex* or point may fall into the right *Line* *OX*.

Therefore the distance *FP* is sought, viz. in which the first *Ray* from *S* may come to the *Eye*.

In the *Triangle* *NOT* the *Angle* *NTO* is found from the given *NT*, *TO* and from the right *Angle* *TNO*. And again in the *Triangle* right *Angle* *NTS*, *NT*, *TS* is given, and the right *Angle* *SNT*: the *Angle* *NTS*, shall be found out: and so the whole *Angle* *OTS* shall be had, whose measure is the *Arch* *PS*, the distance demanded.

To find the distance of a Ship, &c. by the Eye.

OT: Proposition VI.

On the contrary, if the Altitude of the Eye be given, and the distance, from which first the top of the approaching Mast of the Ship or Tower may be seen, to find out the Altitude of the Tower, or Mast of the Ship.

In the Diagram of the former Proposition in the Triangle NOT, from the given NT, TO, the Arch NP is found, which being substracted from the known Arch RF, (from the given distance turned into minutes) the Arch FN, or the Angle NTS is left. And in the Triangle NTS, the right Angle NT is given, and N is the right Angle; therefore the Hypotenuse TS shall be found, from which if TF be taken, FS is left the demanded Altitude of the Tower, or Mast of the Ship, or of any Mountain.

Proposition VII.

The refraction of Rays in the Air, augmenteth the apparent Semidiameter of the sensible Horizon.

For there is a divers refraction of the Air in divers places; but the thicker, by how much it is nearer the Earth. Therefore although a Ray cannot come by a direct way to the Eye O, from the point situated beyond N, for Example F, yet his Ray may be so broken in the Air, that the refract may be NO, or the Tangent of the Earth.

Of refraction of Rays in the Air.

CHAP. XXXV.

Of the three parts of the Nautick Art, and in special, of the first part, viz. the making or building of Ships.

Proposition I.

That is termed the Nautical Art or Science, which teacheth how a Ship may most safely with the assistance of the winds, be sailed from one place to another through the Sea.

By the Winds Ships are carried from one place to another in the Seas.

Because in this discipline the places of the Earth are compared amongst themselves, or mutually to themselves, and their respective situation is examined, therefore deservedly it is referred to the respective part of Geography. Now I suppose that three parts may conveniently be constituted of this most Noble Art so much useful to human Society. 1. The Art of building of Ships, which also considereth the motion of the Ship in the water, or else presupposeth it as known. 2. Concerning the lading of Ships. 3. The Direction, Government or Sailing of a Ship, which is termed the Art of the Master, or Pilot, and in general the Art of Navigation by way of Excellency: unto which also the definition of the Nautick Art is most of all agreeable. And this part with greater right doth appertain unto Geography than the two former, which are more truly referred to the Statics, and Mechanics: now the Art of Sailing doth wholly depend on Geography.

Proposition II.

In the Fabricks of Ships these things following must be observed.

1. That the matter or wood be taken, which may endure very long in the water, of which Vitruvius and other Authors are to be consulted. Hither also

Things to be noted in the Fabricks of ships.

also belongeth how the Woods are to be prepared, and their density to be augmented, the useless moisture to be consumed with Fire, Pitched, and defended from corruption. This Doctrine must be taken from Philosophy.

2. That such a Figure or Shape be given to a Ship that is most apt for a quick motion, and may be moved by a small power.

3. In this Fabrick, and in reference to the Figure, this must be observed, that a Ship may with ease be defended against storms and tempests; but of this I shall treat in the Second Part, where I shall speak of the lading of Ships.

4. The Magnitude of Ships must be considered; where there is a great comparison between the Ancient and Moderns. Some suppose that the Ship of Alexandria, made by Archimedes by the Command of Hiero King of Sicily, and presented to Ptolomy King of Egypt, was of 12000 tons. The Ship of Philopater is delivered by Cabrenus to have been in length 280 Cubits, in breadth 38, and in height 48 Cubits. The greatest Ships at this day are those of the Spaniards, or Portugals; they call them Caracasts. But of all Nations in Christendom, the English may best brag of their gallant Ships for the service of War.

The Magnitude of Ships.

5. There belongeth to the building of Ships, the knowledge of every part, as the Keel, the Rudder, Ribs, Head, Stern, Masts, Yards, Cables, and Anchors, &c. of which not only the matter, figure, and coherency, but also the Weight and Magnitude are to be explained.

6. To the Fabrick of Ships belongeth the skill how to prevent a breach, leak, or other defects of Ships.

Thus much in brief of the First Part of the Nautick Art of building of Ships.

CHAP. XXXVI.

Of the Lading of Ships, or the Second Part of the Nautick Art.

Proposition I.

The burden to lade Ships withall is expressed by Lasts, and Tuns.

The Tun of a Ship is supposed to be 2000 pounds weight, the Lasts twelve Tuns.

Of the Lading of Ships.

Proposition II.

The body or matter which is higher than water, is not mergent altogether in the water, but some part of it is above, but if it be of a greater weight than water, it will sink to the bottom: if of the same weight, it keepeth the given place in the water.

Hitherto belongeth the various knowledge of the weights of bodies, as of Lead, Gold, Iron, Wheat, Sand, Oyl, Wine, the gravity of all which must be compared with water.

Corollary From hence it is manifest, that the weight of the matter to lade the Ship with, taken with the burden of the Ship, ought to be lesser than the burden or gravity of the water, whose moles is equal to the solidity or capacity of the whole Ship.

Proposition III.

By how much the Figure of the Ship cometh to an Ordinate, that is to a Cubick equality of Longitude, Latitude, and Thickness; by so much the more it can sustain the greater burden in the water.

The demonstration must be sought from the Statics.

Pro-

Proposition IV.

In the Lading of Ships respect must be had to two things; first, that there is not imposed so great a burden, that its weight taken may be equal with the weight of the Ship, or greater than the Moles of the water which is equal to the solidity of the Ship, but that it be lesser, though not much. But if the matter to lade the Ship be so light, the burden must be augmented with Ballast. Secondly, the depth of the water must be considered, through which the Ship is to sail.

Ballasts required in a Ship.

Spanish Ships carry greater burden than the Dutch.

For although the gravity of the Water admitteth of this or that weight of the Ship or Lading, when this is lesser than the equal gravity of the Ship is to the moles of the Water; yet if the Water hath lesser profundity than the part of the Ship beneath the Superficies of the Water, the bottom will not grant a motion to the Ship, but detain it. This is the reason that Spanish Ships carry greater burden than Dutch, because they have the Sea deeper on the Shore, and in the Harbours, as also greater Ships come to Zeland, than to Holland.

Proposition V.

If a Ship be so burdened, that its weight, or gravity, be almost equal to the weight or gravity of the Sea water, equal to the capacity of the Ship, yet it sinketh not in the Sea, but when it shall be brought into any Rivers, it sinketh to the bottom.

The reason is because the Water of Rivers is lighter than the Water of the Sea. Therefore if the weight of the laden Ship be almost equal to the gravity of the Marine Water, therefore it shall be greater than the gravity of River Water, and so the Ship shall be sunk in the River, or carried to the bottom. Many Ships for this reason have perished, which have been over laden by unskilful Mariners, or not unburdened in the Mouths of the Rivers. Now how much this gravity should be, is known from the proportion of the Sea Water to River Water.

Proposition VI.

Any body swimming on the water hath that weight that the watery Moles hath, equal to the demergent part of this body.

Corollary. The part of the Ship being given which is under Water, the weight of the whole burdened Ship may be found. For the gravity of the Water is known, or is easy to be found. For Example, one Cubick foot of Water is 70 li. and therefore if the part of the Ship under Water be 2000 Cubick foot, therefore the gravity of the Watery Moles which is equal to the part of the Ship under Water, shall be 140000 li. So much also shall be the weight of the Ship laded.

Proposition VII.

A Ship is most commonly accounted commodiously to carry that quantity of burden whose gravity is equal to the gravity of half the Moles of water, which the Ship can contain.

For Example, if the Ship can carry 500000 Tun of Water (whereof every one is accounted at 2000 li. weight) that is if it contain the Water of 1000000000 li. You may conveniently lade it with the burden of 250000 Tuns, 1000000000. In this sense you must understand it, when they say that Ships are so many Tuns, or carry so many Lasts.

The Spanish Carracks carry 1200 Lasts: the greatest Holland Indian Ship 800 Lasts.

Pro-

Proposition VIII.

By how much the Weight of the Ship laded is greater, by so much the less it is tossed with storms, and tempests.

Ships of 2000 Tuns are not in danger of those Tempests, which are vexatious to Ships of 300, or 500 Tuns. Much more might be said, but this may suffice for Elements.

A laded Ship is not so subject to be tossed in Tempests as when not laded.

CHAP. XXXVII.

Of the third, and chief Part of the Nautick Art, viz. the Art of Guiding, or Navigating of a Ship, and its subdivision of the Four Parts.

Proposition I.

That is termed the Art of Guiding or Navigating of a Ship, which teacheth unto what quarters a Ship is to be Guided in any situation of it in the Sea, that it may come to the purposed place without danger.

I Make Four Parts of it.

1. *Special Geography*, that is the knowledge of a space intercepted between two places, and the properties of the same. 2. The knowledge of the quarters in every place. 3. The cognition of the Line by which the Ship is to be brought from one place to the other; for there are between every two places infinite intercepted Lines; this part is termed *Histiodromice*. 4. The knowledge of the situation of every place, unto which by Sailing we arrive, or how these places are situated unto that place, unto which the Ship is to be directed. This is the chief part of the *Art of Sailing*.

Of the Guiding, or Steering of Ships.

Proposition II.

The cognition of the intermedial space comprehendeth these things.

1. The situations of the places, the occurrences of Angles, the bending of the Shores, the aspect of Promontories, Mountains, Bays, the depths of Waters, the sight of Islands, and Coasts of Lands. All which are known from *Special Geography*; and *Nautical Maps*, but most easily, and with greatest certainty from observation, and frequent Navigation through any tract of Land, which is the only Cause that some Mariners are more fit to guide a Ship to such place, and others to another.

2. The knowledge of the General and Special Winds, and those that are peculiar unto any place, which is exceeding necessary in Navigations which are undertaken in the *Torrid Zone*, and adjacent places. For here a general Wind, and in many places *Anniversary Winds* (which we have shewed to be called *Moussons*, Motions, in our XX. Chapter) do rule, which either promote or hinder Navigation. For the *Indian Sea* is Sailed by these *Anniversary Winds*. Of these, and also of *storms* and *tempests* we have spoken in the XX. Chapter.

3. The Condition of the Motion of the Seas in every tract, also the quarter of it, into which quarter the Sea and Waves are born: for they carry the Ship with them. The diversity of those Motions in many places we have shewed in the XVII. Chap.

Things observed from Special Geography and Nautical Maps.

See Chap. 20.

See Chap. 17.

First

First of all there is required a knowledge of the Ship, and reflux of the *Sea*, and the time or hour of the increase and decrease at every day; the supputation of which is termed the reckoning of the Tides, for except a *Master* know this, the Ship is often much hazarded, when it is near Shores, or Sands, whereof most in the greatest increase of the Water, do not hinder the passage of the Ship, but most do in the decrease. So with a flux the Navigation is more facile to the Shore, and to the inlets of Rivers, and the contrary is discovered in the reflux. Of the supputation of this time we have spoken a little in the Proposition of the XVII. Chapter.

CHAP. XXXVIII.

Of the knowledge of places, viz. the North, South, East, and West, and the intermedial quarters.

Proposition I.

In every place to know the *Plagas*, viz. the North, South, East, and West, and the intermedial quarters.

The quarters
very necessary
in Navigation.

The knowledge of this is the most necessary of all the *Problems* of the whole Art of Navigation, seeing that a Ship must be guided unto some quarter, which if unknown, there can be no direction, and the very defect of this knowledge alone hindered the Navigation of the *Ancients*; and in this is the chief difference between the *Ancient* and *Modern* Navigation. For the *Ancients* had not a Method by which at any time in the large *Ocean* they might know where was the *North*, where the *South*, and the other quarters. Therefore they could not, nor durst they commit themselves to the vast *Ocean*; but only coasted the Shores, so that they might know the quarters from other signs.

The *Ancients*
had a double
Method of
finding out
the quarters.

The *Ancients* had a double Method, (which serveth also to the *Modern* Navigation) of finding out the quarters (now this *Problem* is the same with that to find out the Meridian Line, and the *North* and *South* quarters; for these being known, it is easy to know the rest.) First by the *Stars*, viz. in the night, the *Bear*, or the *Helice*, and *Polar* Star so called, in the extremity of the tail of the *Ursa Minor* (of great fame amongst the *Ancients*) which shewed the *North* quarter, whence all the rest are found; for the face being turned to the *North*, the *East* is at the right hand, and the *West* on the left, the Line of which quarters at Right Angles cutteth the Line of the *North* and *South*. And these *Cardinal* quarters being found, it is easy to find the intermedial quarters, unto which purpose, that there may be no need of a description, they had a Circle made with the quarters, whose *Northern* Line being placed above the *Northern* Line of any place, the other quarters at one sight are discovered. But in the day they sought out the quarter by the rising or setting of the *Sun*, as we have shewed in the XXVIII Chapter.

See Chap. 28.

2. The other Method of the *Ancients* for the knowing of quarters, was the knowledge of the situation or extension of the Shoars, and one *Promontory* to the other. For seeing the quarter of this extension was known to them either from the Maps, or from Observation, and Experience, they might in Navigation by seeing them know the other quarters. (For one quarter being known, all the rest are known) therefore the *Ancients* did not far depart from the Coasts, viz. that they might know the quarter by the benefit of the known quarter of the extension of Shoars. For they could not always use the Method of the *Stars*, and the rising and setting of the *Sun*.

3. The

3. The third Method of the *Ancients* of the knowledge of the quarters was the observed course of the Ship. For going from any place, and guiding the Ship to the known quarter, they were able from the mutation of the course of the Ship to know the quarters.

4. Hence it is manifest, that the chief cause of the dangerous and imperfect Navigation of the *Ancients*, was the ignorance of a Method, by which every where in the middle of the vast *Ocean* they might know the quarters, and so that quarter unto which the Ship was to be steered. For, as I have said the Method by the *Stars*, and the rising and setting *Sun*, cannot be applied on all days, and on the hours of every day; for the mark from the situation of the Shoars faileth in the mid *Seas* in the night, neither is it safe enough in the day time.

The third Method from the observed course of the Ship hath not place when the Ship is tossed by boisterous winds, and tempests, from one quarter to another. And in this casually lyeth the chief difficulty. This I thought fit to admonish concerning the Modes of the *Ancients* for the finding out the Meridian Line and the *North* and *South*, by reason that the imperfection of these was the cause of the dangerous and small Navigation of the *Ancients*, seeing that they were never able to commit themselves to the vast *Ocean*, and therefore never knew those Regions between which the *Ocean* is interposed (of which the chief is all *America*, never yet fully known.)

But at this day the Method of knowing the quarters in all places, and of finding out the Line of the *North* and *South*, is facile, by the benefit of the admirable propriety which the *Loadstone* and all *Iron* touched by it hath been found to have. Viz. that all *Magneticks* not hindered by others in any place direct their points almost to the same quarters. For there are two opposite points in the *Loadstone*, whereof one always and in all places turneth it self to the *North*, or the adjacent quarter, the other to the *South*, and so also the other points of the *Magnes* respect the other quarters viz. every point its particular quarter: but all of them are not considered, but only those two points, which as I have said do convert themselves to the *North* and *South*, which are termed the Poles of the *Magnes*, one *Northern*, the other *Southern*. And the same virtue (much to admiration) is communicated to the *Needle*, but by an inverted and contrary operation of nature. For the end of the *Lamine* or *Needle* which is touched at the *North* Pole of the *Magnes*, doth not convert it self to the *North*, but to the *South*, and that end which is rubbed at the *South* Pole of the *Loadstone*, turneth not to the *South* but to the *North*. These points of the *Needle* are also termed the Poles. Although therefore the *Loadstone* and the *Iron* touched by it have very many notable properties, yet all may be referred to two species or heads: one is, that virtue which doth extract the *Iron*: the other, by which in every place it directeth the two points of its Superficies to the *North* and *South*. The former faculty the *Ancients* were not ignorant of, but only this latter.

The virtue of
the Loadstones.

Seeing therefore the *Magnes* hath this property, therefore by its help it is easy to find in any part of the Earth, or *Sea*, where the *North* or *South* is; whence all the other quarters are soon known. For if those points of the *North* and *South* be noted in any *Loadstone*, or the *North* and *South* Pole, and we have this *Magnes* in the Ship, where we are in the *Sea*, when we desire to know the quarters, the *Loadstone* being hung by a Cord that it may easily move it self, will so direct its Poles to the quarter of the *North* and *South*, that it will shew the quarters demanded. But the *Magnetick Needle* is more easy for use, whose end is touched at the *South* Pole of the *Magnes*. For if that this *Needle* be placed in the middle upon a sharp perpendicular pin, so that it can freely turn round, the *Needle* resting will shew by one of its ends the *North* quarter, and by the other the *South*.

From what hath been said, it is easy to make a *Nautical Instrument*.

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Pro-

Proposition II.

To make a Mariners Compass.

Of the making
the Mariners
Compass.

Let the described Circle on any Paper be divided into 32 Quarters, or degrees, and let one of these deg. being taken for the North Quarter, be ascribed with these appellations. *Viz.* with a peculiar Sign (the *Flower de Luce*) and the found out points for the other Quarters, *viz.* South, East, West, North-East, North-West (as we have propounded them in the *Diagram* in the XX Chapter.) Mariners term this *Chart* the *Rose*.

Then let the *Magnetick Needle* be so affixed beneath the *Chart*, that the middle of the *Needle* may be beneath its Center, and the North Pole of the *Needle* may be subjected to the Line of the Paper unto which we ascribe the Northern Quarter. Moreover the Paper being so made, with the *Needle* lying under; let it be put upon the pointed pin, that it may have a free Circumrotation. So the *Index* of the North, *viz.* the *Lilly*, in any place will shew the North Quarter, and the *Indexes* of the other Quarters after the same Mode will shew the other Quarters of the World. And this is the *Fabrick* of that Instrument which the *Seamen* term the *Compass*, by the help of which they commit themselves to the vast *Ocean*, and seek the remotest parts of the World; steering the Ship unto that Quarter which the *Loadstone* directeth unto. The construction of this *Compass* is for the places in which the *Magnetick Needle* respecteth the Northern Quarter: for the other places see the VI. Proposition.

See Prop. 6.

Proposition III.

There are so many Quarters, as there are Points in the Periphery of every Horizon, that is, they are infinite: now *Seamen* number 16 in their small Navigations, 32 in those that are Moderate; and 64 in the great Voyages through the vast *Ocean*.

Concerning this Proposition we have spoken in the XX Chapter, from whence an accurate explication of it may be drawn. The *Portugals* call these Quarters *Rumbs*. The *Dutch*, *de Cours*, also *Een Streec*, although they attribute these terms also to the *Loxodromical* part. But when they will denominate the intermedial Quarters, they do that by the division of a space lying between two Quarters.

Proposition IV.

The *Magnetick Needle* (as the Poles of the *Magnet* itself) in very few places doth respect the very Quarter of the North and South, but in most places declineth a little from that towards the East or West, and that in an equal declination, and therefore altogether sheweth not the true Quarters. That declination is called *Chalybolis*.

No Declination at one of the Isles of *Azores*.

Yet at one of the Isles of the *Azores* called *El Corvo*, there is no declination, but the *Needle* sheweth the exact Northern point. The same is observed in some places of the same Meridian, but not in all parts of it. In places situated from this Island towards the East, (even to the Promontory of the procurant of *Africa*, called *Cabo das Angulhas*, not far from the Promontory of Good Hope) the *Needle* declineth from the North towards the East in an equal declination, even to the Islands of *Tristan de Cunha*, and the declination augmenteth a part more remote by 70 degrees, so that it is there about 13 degrees, then again it decreaseth to the places adjacent to the Promontory de *Agulhas*, where again there is no declination. From that place to-

towards the Indies the Declination of the *Needle* beginneth from the North towards the West at *Hamburg*, the *Chalybolis* of 99 degrees: At *Amsterdam* at this time about five: for in time past it was greater.

Now observations testify that this Declination doth not remain the same, but changeth in course of time. For at *London* in Anno 1580 it was observed 15 degrees 15 minutes, but in Anno 1622, it was 6 degrees, 13 minutes; and in Anno 1634, it was 4 degrees, 6 minutes. And the observations were performed not only by the new but old *Needles* also. At *Paris* in Anno 1620 the Declination was observed 3 degrees, which in Anno 1610 was found 8 degrees. The same was also observed in other places.

Proposition V.

To find the Declination of the *Magnetick Needle* from the true quarter of the North in any place.

Let the Meridian Line be found from the Heaven, as we have shewed by divers ways in the XX Chapter, and the Declination of the *Magnetick Needle* will soon be discovered. But the following Proposition will shew the more easy Method for the use of *Seamen*.

The finding
the Declination
of the *Magnetick Needle*, &c.

Proposition VI.

To explain the terms of Navigation, which are used in designing of this Declination, and the correction of the Mariners Compass, and the Modes which Sailors use to find out the Declination in the Sea.

In the composition of the *Compass* the defect of the Declination is amended or corrected, *viz.* the Declination of the *Needle* being known in the place, for which the Instrument is prepared, that *Needle* must not be affixed to the Line of the *Chart*, which hath the *Flower de Luce*, and should be the *Index* of the North, but under that Line, which is removed so many degrees from the Line of the North as the Declination of the *Loadstone* hath been found to have towards the Line of the East, or West. For so the *Lilly*, and the Line of the North, will shew the true North, although the *Needle* may Decline.

The Modes
which Sailors
use to find out
the Declination
at Sea.

But for the use of Navigation, because in divers places there is a different Declination, the *Needle* ought to be fitted to the *Chart*, that that may be carried round, the *Needle* remaining immovable, and the Line of that quarter may be brought above the *Needle*, which the observed Declination shall shew. For so the same Instrument shall serve for all places.

Now for the finding out of the Declination of the *Magnetick Needle* from the true Line of the North, and South, thus many *Mariners* do Act. They observe the quarter of the *Compass* in which the *Sun* doth rise; and the quarter of the West, in which the *Sun* setteth, for although that then they are in another place, yet they are absent a small interval from the former in which the Declination is not varied.

If these quarters of the *Compass* are equally distant from the quarter of the *Compass* in the North, then it is a sign that the *Needle* in that place hath no Declination, and so there is no need of Correction, but the *Needle* ought to remain under the Line of the North: but if the quarter of the Eastern *Sun* be further distant than the quarter of the Western *Sun* from the quarter of the North, then it is a sign that the *Needle* Declineth in that place from the true Line of the North, towards the West: but lastly, if the quarter of the Eastern *Sun* be farther distant than the Western *Sun* from the Northern quarter of the *Chart*, it is a sign that the *Needle* declineth

towards the East. The quantity of the Declination is thus known: let the *Arches* intercepted between the *Northern quarter* of the *Compass*, and the *East* and *West quarters* of the *Sun*, be noted let the lesser *Arch* be deducted from the greater, the half of the residue is the Declination sought, and so many degrees the *North Line* of the *Chart* must be removed from the *Magnetick Needle*.

This Method hath two inconveniences: 1. The *Sun* seemeth to arise when he is as yet 34 minutes beneath the *Horizon*, from which difference of the apparent and true rising, as also of the setting, an error redoundeth unto the quantity of the Declination, which although it be little in the places near the *Equator*, yet in places somewhat remote from the *Equator*, it may ascend unto two degrees. 2. The *Sun* oftentimes ariseth covered with Clouds, which are almost perpetual in the *Torrid Zone*.

Mariners use also sometimes another Method which is less subject to error, viz. they observe the quarter of the *Compass*, in which the *Sun* is discovered any time after his rising, and at that time they observe the *Altitude* of the *Sun*. Then after noon they expect, or wait, until they find the *Sun* to come unto the same *Altitude*; which being found, they observe the quarter of the *Compass* in which the *Sun* was then beheld; from these quarters or *Arches* intercepted between them and the quarter of the *North*, the Declination of the *Needle* is found, after the same Method that we have spoken of.

Sometimes *Mariners* skillful in *Trigonometry*, or by the help of an universal *Planisphere* use a third, or fourth Method, viz. when that immediately by one observation the Declination of the *Needle* must be enquired, to know the quarters. For either they observe the quarter of the *Compass* in which the *Sun* riseth or setteth; or they observe the quarter in which they found the *Sun* at any observed *Altitude*. Then by a *Trigonometrical Calculation*, or a *Cosmick Planisphere*, they find in what quarter the *Sun* truly sticketh at this time of the rising, or *Altitude*. The difference of this or that quarter observed on the *Compass*, is the very Declination of the *Needle*.

Proposition VII.

To shew those things, which withdraw the *Magnetick Needle* from its natural situation in any place, and therefore are the Causes that it sheweth not the quarters as it ought to do.

The chief are these: 1. The blunt extremity, or less sharpness of the pin on which the *Needle* is fixed. 2. Some matter in the hole that receiveth the *Needle*. 3. If the *Paper* or *Rose* lyeth beyond its *Horizontal* situation. 4. Some admission of *Air*. 5. The vicinity of iron: these hindrances of the true shewing must be avoided.

Things which withdraw the *Magnetick Needle* from its natural situation.

CHAP.

Of the Hystodrome, or Line of the course of a Ship.

This is the most difficult part of all Geography, of which some Authors have written so obscurely, and very many so falsely, that the Readers could gain nothing from their writings but a confused imagination, and never understand the matter itself. But we will endeavour as much as is possible to give a clear and distinct explication, and there is required in the Reader an attentive consideration.

Proposition I.

If that any two places be situated in the *Meridian*, or if that another place be situated from some place towards the quarter of the *North*, or *South*, that same place shall be situated towards the same quarter of the *North*, or *South*, from all those places or points, which are interposed between those two places first assumed. One of the two places lying in the same *Meridian*, from another, and from all intermedial points, is situated towards the same quarter of the *North*, or *South*.

The truth of the Proposition is manifest if that it be rightly conceived. By places intercepted between two points or places, are understood all points, which are the intercepted *Arch* of the great Circle drawn through the two points first assumed; or the points of that *Arch* which sheweth the shortest distance. Let that place at which the situation of the other place is expended, be termed the first; and that other whose situation is expended, be termed the second. And for the more easy understanding, the first place is so to be conceived, that it may be in the same in the middle of the whole Earth, or in the middle of the circumjacent Regions; and by reason that it is situated in the *Brazen Meridian* of the Globe, infinite *Verticals* are drawn through it by the circumjacent places to the *Horizon*, and so the situation of all the rest of the places is expended at it, or the distance from the *Meridian* of it, or of its *Angles* which they make vertical with the *Meridian*.

The Cause of the Proposition is, because that the Angle which the *Meridian* of the first place maketh with the vertical of the first place drawn through that second place, denoteth the situation of the second to the first, or to the quarter. Now if we conceive all the points interposed between the two places assumed of one *Meridian* (for these are they of which the one towards the other lyeth towards the quarter of the *North*, or *South*) it is manifest, that the *Meridian* of every one of them is the same with the vertical, which is drawn through every one from or through either place assumed, that is, that there is no Angle between the *Meridians* and verticals. Wherefore the place assumed is situated at every interposed point towards the quarter of the *North* and *South*.

Proposition II.

If that any two places be assumed in the *Equator*, unto one of which, or the first, the situation of the other or second be to be examined, the second situated from the first in the chief quarter shall be the East, or West, and the second shall be situated in the same Cardinal quarter, to all the places interposed: or one place of two lying in the same *Equator* from another, and from all intermedial points is situated to the same quarter of the East or West.

For the more easy understanding of this, let any place in the *Equator* be taken, and so placed that the *Wooden Horizon* may become the *Horizon* of it, that

The Line of the course of a Ship is the most difficult part of Geography.

Of the situation of two places in one Meridian.

that is, that the Poles of the Earth may be in the Horizon it self. Then let the second place in the *Equator* be taken, whose situation or quarter we consider at the first place. It is manifest that it is the chief quarter of the *East*, or *West*. For the *Equator* is *Vertical* to it, which is drawn from the first place through the second perpendicular to the Horizon, and cutteth the Meridian Line at right *Angles*. The same is also true concerning all the interjected *points*, which if that they be brought to the *Brass Meridian*, the Wooden Horizon shall be their Horizon, and the *Equator* shall be the Prime *Vertical* of them, which cutteth the Meridian Line at right *Angles*, and passeth through the second place. Therefore this second place shall be situated to all those interjected *points* in one and the same *Cardinal* quarter of the *East*, or *West*.

Proposition III.

If that the second place with the first be not situated in one and the same Meridian, and both of them be not in the Equator; the second place shall not be situated to the first, and to all interposed points in one and the same quarter, but in divers quarters at divers points.

From this Proposition dependeth the knowledge of the Original of Lines which the Ship maketh, therefore the Reader must endeavour well to understand it.

Let any two places be taken in the Globe, which neither of them are in the *Equator*, nor in one Meridian (for in these two kinds of situation the quarter of the second place is not varied at the intermedial places.) for Example, Let *Amsterdam* be taken for the first place, from whence the Voyage is to be begun, and *Fernambuck* in *Brasil* for the second, or unto which the Voyage is appointed. Let *Amsterdam* therefore be brought to the *Brass Meridian*; and let the Pole be Elevated for the *Latitude* of the same, (for so the Wooden Horizon representeth the Horizon of the place), let the *Quadrant* be affixed to the *Vertex*, and let it be applyed to *Fernambuck*, it will shew the quarter in the Horizon in which *Fernambuck* lyeth from *Amsterdam*. And the *Arch* interjected between these two places exhibiteth on the Globe the intermedial *points*. It must therefore be shewed, that the quarters in which *Fernambuck* lyeth from every one of these *points*, are not the same, but all divers, or that from every one of those intermedial places *Fernambuck* doth not lie towards one and the same quarter.

For the understanding of this we must repeat from the preceding Doctrine that the *Angle*, with the Meridian of this assumed place, maketh with the *Vertical* passing through the other place, sheweth the quarter of another place from some one place assumed; or the *Arch* of the Horizon intercepted between the Meridian and this *Vertical*, as the *Angle* sheweth the quarter of *Fernambuck* from *Amsterdam*, which the *Quadrant* with the *Brass Meridian* maketh (which is of *Amsterdam* it self).

Therefore to prove the truth of this Proposition, let what *points* you please be taken between *Amsterdam* and *Fernambuck* in the *Arch* subject to the *Quadrant*, and let the Meridians passing through by them be conceived. It is best to take those *points*, through which on the Globe the Meridians pass, (or the Circles of *Longitude*) because therefore the *Quadrant* passeth through every one of these places, and *Fernambuck* it self, it will represent the *Vertical* of every place, in which *Fernambuck* lyeth from them. Therefore the *Angles* which it maketh with the Meridians of each place, are the *Angles* of Position, and shew the quarters in which, or towards which *Fernambuck* lyeth from every intermedial place. Now these *Angles* are unequal, and of a different *Magnitude*, therefore the quarters also towards which *Fernambuck* lyeth from those places are divers. Now that these *Angles* are unequal is manifest from the very sight, or more evident if that by any interval of the *Compass* you draw an *Arch* from each *point*, and measure these *Arches* intercepted between each *Meridian* and the *Vertical*: or if that we have ready

by it self a Crooked portion, which may be fitted to the Superficies of the Globe; or if that the places themselves be brought to the *Brazen Meridian*, and the Pole be Elevated for their *Latitude*; let the *Quadrant* be applyed to the *Vertex*, and to *Fernambuck*, and in that situation let the *degrees* of the *Arch* of the Horizon be reckoned.

Corollary. Therefore the *straight lined* and *Sea Maps* are very defective, which do so represent the places, that if that any two places be taken, at one of which the situation or quarter of the other be examined, this other doth seem to be in one and the same quarter from the intermedial places, which yet is false. The cause of the fault is, that they exhibit the Meridians *Parallels*, which yet do meet in the Poles: but *Seamen* regard not this fault, so that they do but relate the Course or quarter which they ought to have observed in Sailing from one place to another.

Straight lined
and Sea Maps
are defective.

Proposition IV.

If a Voyage be to be made, or that a Ship be to Sail from one place to another (which two places are not in one Meridian, or both of them in the Equator) by a most short cut, or by this means, that it may never recede from the interposed Arch of the Vertical, in such a Voyage the quarter is changed every moment, or the quarter becometh another and another, into which the Voyage is to be taken, or the Ship is to be Sailed.

This Proposition is manifest from the foregoing. For let the Voyage be taken from *Amsterdam* to *Fernambuck* by the nearest way, that is, through the *Arch* of the *Quadrant* affixed at *Amsterdam*, and passing through by *Fernambuck*. Because therefore every where in the whole Voyage, or in every point the Voyage is directed towards *Fernambuck*, and it is shewed in the precedent Proposition, that the quarters are divers, towards which from those middle *points* *Fernambuck* lyeth, therefore it is manifest, that the quarter becometh another and another in every moment, and in each *point*, into which the Ship is to Sail, or to be Sailed, that it may respect *Fernambuck*.

But if that the places be situated in one Meridian, or if that both be in the *Equator*, the Case is otherwise. For in them the same quarter of the Voyage of the North or South remaineth: in these the *Cardinal* quarter of the *East* or *West*.

Proposition V.

A Voyage cannot be so undertaken, or a Ship so directed, that it may tend in each moment to other, and other quarters, but for some time at the least whilst it is moved, it tendeth to one and the same quarter in appearance. Therefore whilst we are to Sail from one place to another, such a way, or line of a way is most convenient, whose every two near points are situated in one and the same quarter in shew, although that this way be not the shortest.

A Ship cannot tend from one quarter to another in a moment of time, but whilst that it is moved, for some time at the least it tendeth to it. Moreover it can by no means be done, that the *Seamen* should know the quarters, unto which the Ship should be Sailed, if that another quarter were so often to be assumed.

A Ship in a
moment cannot
move from
one quarter to
another.

Therefore it is evident, that that passage between two places is most commodious for Navigation, whose every two vicine *points* are situated in one and the same quarter, so that the Ship may be continually directed unto one quarter, and to come by such a direction to the place appointed. This being supposed, let us enquire, what way is thence for the Motion of the Ship. Which way indeed, if that the places be situated in one Meridian, shall be part of the Meri-

The knowledge of the
Original of
Lines which a
Ship maketh,
dependeth on
this Proposition.

Meridian it self: if in the *Æquator*, that way shall be a portion of the *Æquator* it self; if in one Parallel, it shall be a part of this Parallel; if in any other *Circle* besides these, that way shall be another Line, not that *Circle*, as we shall shew in the following *Propositions*.

Proposition VI.

If that a Voyage be appointed, or that a Ship be directed to the North or South quarter, (that is, if that the place from whence, and the place unto which, be in one Meridian), the line of the Motion of the Ship it self shall be a part of the Meridian.

See Prop. 1.
of this Chap.

It is proved from the first *Proposition* of this Chapter. For the place required at all the intermedial places, that is at the points of the *Arch* of the *Meridian* is situated in one and the same quarter of the North and South, as is there said. And by the preceeding *Proposition* such a way is commodious for Navigation from place to place, whose every two vicine points are situated in one and the same quarter. Wherefore seeing that the *Arch* of the *Meridian* is such a way, that shall be the way or line of the Motion of the Ship, viz. which the Ship by its Motion describeth, whilst that it is continually directed or steered to the North or South.

Proposition VII.

If that a Voyage be appointed from any place situated in the Æquator towards the East, or West quarter, the line of the Motion is a portion of the Æquator it self.

See Chap. 2.

We have shewed in the Second *Proposition*, that if two places be taken in the *Æquator*, the first, from whence, the second unto which the Voyage is appointed, that the second is situated in one and the same East and West quarter from all the interposed points, that is, from the points of the *Arch* of the *Æquator* it self. Because therefore the Ship is continually directed unto these quarters, the *Arch* of the *Æquator* interposed between these two places shall be the way of the Motion of the Ship. And because that we supposed in the V. *Proposition*, that such a way between two places is to be chosen, and is commodious for Navigation; viz. whose every two vicine points are situated in one and the same quarter, such a portion of the *Æquator* shall be chosen for the way of the Ship.

Proposition VIII.

If that a Voyage be undertaken from any place situated without the Æquator, towards the East or West quarter, so that the Ship continually may be directed to either of these quarters, the circumference of the Vertical Circle shall not be the line of the Motion of the Ship, but the Parallel of the Æquator, viz. of the Circle of the Latitude of the place, from which the Voyage is appointed.

For because that a Ship, whilst it tendeth from one *Meridian* to another, is supposed to have respect to the same quarter, it will not remain in the *Vertical*, but presently into another point of the vicine *Meridian*, viz. which is a point of the Parallel of the *Æquator*, or of the Circle of the Latitude of the place whence the departure was made. For every point of this Circle is such, that the *Tangent lines* of this Circle being brought unto them may respect the quarter of the East and West of each of these points. Furthermore the Keel of the Ship, because that it is continually supposed to be directed towards these quarters, always shall touch this Parallel in any point. Or by reason that any two points of this Parallel are such, that one is situated from the other towards one

one and the same quarter of the East, and West, and the Ship is supposed continually to be directed unto this quarter; neither is there any other Line on the Globe, whose points are so directed; therefore it followeth, that the way of the Motion of the Ship is this Parallel of the Latitude of the place.

Corollary. From the Three preceeding *Propositions* we collect, that if a Voyage be undertaken from any place, or that the Ship be continually directed towards any Cardinal point; that the way of the Ship is Circular.

The way of a Ship is circular.

Proposition IX.

If that a Voyage be appointed from one place to another situated in the same Parallel, or Circle of Latitude, this way of the Ship shall be a portion of that Parallel, although this be not the shortest way.

For that line is chosen for the Navigation of the Ship, by which we arrive at the place appointed, by directing the Ship continually unto one and the same quarter. And any two of the points of the Parallel of the Circle are such. Wherefore the portion of the Parallel shall be the way of the Motion of the Ship.

Corollary. There is therefore a threefold situation of places, from one of which to the other, when a Voyage is undertaken, the way of the Navigation is the Periphery of the Circle. 1. If that both places be in one *Meridian*. 2. If that both be in the *Æquator*. And 3. If that both be in one Parallel or Circle of Latitude. In the two former kinds of situation the way or line of Navigation is the same with the distance or shortest way: but in the third situation the line of the Navigation is divers from the shortest way. For this is the *Arch* of the greatest Circle interjected between two places. In any other situation of places the way of the Navigation cannot be the Periphery of the Circle, as we shall shew in the following *Proposition*.

A threefold situation of places.

Proposition Xi

If that a Voyage be undertaken from any place, towards any quarter not Cardinal, so that the Ship may be continually directed to that quarter, the Motion of the Ship is not Circular, but a crooked line, and encompassing the Earth with infinit bendings and windings.

Let us conceive a Ship to Sail from some place, when she hath arrived to the vicine *Meridian point*, it is directed towards the point of the following, or nearest *Meridian*, which is situated in the same quarter unto the first point, in which this is first to the first place, and so moreover in the following *Meridians*. Now these points of all the *Meridians* do not make the Periphery of the Circle, but a solid crooked *Helicoides*. A distinct explication of this matter is more easily shewed on the Globe, than by many words.

Lokodromy, is a way or line of Motion which the Ship maketh whilst it moveth from one place continually towards one quarter not Cardinal.

This is the *Nominal definition*: but the *Essential definition* of this line, that is the knowledge of the Nature and Properties of it, is most difficult, for neither is it an *Helix* as many think, neither doth it depend on any property of the *Loadstone*, who say that it hath its existency thence, because the Ship followeth the conduct of the *Loadstone*, neither is it composed of the minute particles of many *Peripheries*, as *Nomina* saith (which is manifest from the very Parallel Circles, which are made from the same Motion of the Ship as of *Lokodromy*) neither is the *Explication* of *Snellius* plain, who saith that *Lokodromy* is an *Helicoidal line* in the Superficies of the Terrestrial Globe, which a right line touching about every where with the *Meridians* in total by contact it comprehendeth those points equal Angles to those drawn out, for

A definition of the word Lokodromy.

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Snellius

Snellius doth not explain how such a *Tangent* ought to be conceived, for how to be drawn; and to speak properly, *Loxodromy* hath not right lines *Tangent*, because it is a *solid line* when that *Tangents* are drawn to plain lines to a curve; for in *solid lines* infinite *Tangents* may be brought to any points. Moreover that definition may agree also to other draughts of lines when unto any point of such a *Meridian*, such a *Tangent*, and *Crooked line* may be conceived to be drawn from the vicine *Meridian*.

Also our definition may be thus proposed: *Loxodromy* is a crooked line encompassing the Earth with many windings, every point of which lyeth from all its other points in appearance in one and the same quarter; or in which if that two points be taken, one point lyeth from another, and all the intermedial points in one quarter; or from any point of which if that circular Arches be drawn unto all the rest of the points, these Arches make equal Angles with the *Meridian*, which passeth through all these several points. This definition is essential.

Proposition XI.

If that a Voyage be undertaken from one place to another, which is not situated with the former in the same *Meridian*, or *Equator*, nor *Parallel*, and in the whole Voyage the Ship be directed unto that quarter, in which the place designed is situated from the place of the departure, you shall never by this Voyage come to the place designed, but continually the Ship shall be removed more and more from it.

This notable property of Navigation seemed Miraculous to Mariners when that it was first observed, which happened in the time of *Petrus Nonnius* the Portuguese Mathematician, who wrote two Books of this Subject; after him many Mathematicians laboured in the explication of this matter, or Crooked line: and lastly, Mariners found it necessary for the Nautick use, and thence Tables were made.

But the Cause of this Phenomenon is, that the Ship being continually directed unto that quarter in which the second place from the first is situated, it remaineth not in the Periphery intercepted between these places, but whilst that it cometh to one point, because here is a new Horizon, and another quarter the extension of the assumed Course, and this is continually done in the following points, thence existeth the Crooked *Helicoidical line*, in which whilst that the Ship is moved in some places, it is more and more removed from the determined place, and else where it approacheth more near.

Proposition XII.

1. When a Voyage is to be undertaken from one place towards another situated in the same *Meridian*, or towards the quarter of the North or South, the Ship is continually to be directed to this quarter of the North or South, or a *Meridian* is to be chosen for the way of the Ship, and it will arrive at the other place.

2. When a Voyage is to be undertaken from one place to another, and both are in the *Equator*, the Ship shall be guided into that quarter, in which the other place lyeth from the first, that is to the quarter of the East or West, or the line of the *Equator* is to be taken for the way of the Ship.

3. When a Voyage is to be undertaken from one place to another, and that they are both situated in one *Parallel* of the *Equator*, the Ship is not to be guided unto that quarter, in which this other place from the first lyeth, or which is extended from the first to the other, for the Ship would never arrive at the other place, but would go with infinite windings about the Earth towards the Poles: but the Course must be made into the quarter of the East or West, for whilst that the Ship tendeth unto that, it describeth by its Motion the *Parallels* of the *Equator*, and so arriveth at the other place.

4. When

4. When a Voyage is to be made from one place to another which are neither in one *Meridian*, neither both in the *Equator*, nor in one *Parallel* of the *Equator*, the Ship must not be guided unto that quarter, in which the other place from the first lyeth, for it would never arrive to the other place, but the Motion of the Ship would describe the *Loxodrome*, which would not pass through another place: but the course must be directed unto that quarter, into which whilst that the Ship moveth, it describeth the *Loxodrome* which passeth through another place into that quarter, whose Angle with the *Meridian* is equal to the inclination of the *Loxodrome*, which passeth through those two places.

All these follow from the preceeding Propositions.

Proposition XIII.

Infinite *Loxodromes* may proceed, or be conceived from any place of the Earth as there are infinite *Verticals*; but yet there are only 28 reckoned about every place, viz. 7 in the Quadrant between the *Meridian* of the place, and the *Parallel* of the place, so that they divide that right Angle into 8 equal parts, and the 2 vicine are distant an equal Angle. Let the *Parallel* it self is termed an eighth *Loxodrome*.

But they are called by the same Names by which the Winds, or quarters are named. On the Globe they are beheld to proceed and turn round about the Earth from the Center of the Compasses, or also from other points of the *Meridian*.

But in Nautick use the intermedial *Loxodromes* are denominated by a distance from the adjacent *Loxodromes*, for Example, in a third part, a fourth part more North, more East.

Proposition XIV.

A *Loxodrome* intercepted between two places is almost, or according to the sense, equal to the Hypotenuse of a right lined plain Triangle, whose one Cathetus is of an equal distance of Latitude of those two places, the other Cathetus is of an equal difference of Longitude of the places taken in the *Parallel*, which is in the middle between the *Parallel* of those two places.

Such Triangles are termed *Loxodromical*. But places very near are to be taken for an accurate Calculation, that a small portion may be interposed, viz. places whose difference of Latitude is only of one scruple.

Proposition XV.

The parts of the *Loxodrome* intercepted between *Parallels* distant by an equal interval are equal.

Therefore many small *Loxodromical Triangles*, are conceived in each *Loxodrome*, of which if that the *Loxodrome* of one be supposed, you have the quantity of the *Loxodrome* from one place into another, whose Latitude is known.

Proposition XVI.

The Latitude and difference of Longitude of two places being given, to find out the *Loxodrome*, by which you may Sail from one place to another. Or two places being given on the Globe, or in a Map, to find out the quarter, unto which the Ship is to Sail, or to be brought from one place to the other.

This is the chief, or rather the only Problem of the whole Art of Navigation, unto which all the rest are referred. If that there be no difference of Latitude, the *Loxodrome* shall not be the way of the Ship, but the *Parallel*.

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The chief Problem in the Art of Navigation, to which all the rest are referred.

tel of those places which yet is commonly termed the eighth *Loxodrome*, because, after the same Mode as the other *Loxodromes*, it is generated by the Motion of the *Ship* which is directed to the Eastern or Western chief quarter. If that therefore there be no difference of *Latitude*, they say that the eighth *Loxodrome* ought to be taken, and the *Ship* must be steered to the chief *Oriental* or *Occidental* quarter, in the whole *Navigation*. For although it be not directed to the appointed place, yet by this false direction the *Ship* shall be brought to the place.

If that that there be no difference of *Longitude*, the way of the *Ship* shall not be *Loxodromical*, but a part of the *Meridian* in which both the places lie, and the quarter of the *North* or *South*, is taken for the direction of the *Ship*.

But if the places given be of a different *Latitude* and *Longitude*, and that you are minded to work by the Globe, let the given *Latitude* be noted on the *Brazen Meridian*, and if the Parallel of one *Latitude* have in it the Center of any *Compass*, or from whence the *Loxodromical* lines were drawn, let this be brought on the Globe to the *Meridian* under the noted degree of *Latitude*: then let the Globe be turned round, until so many degrees of the *Aequator* pass through the *Meridian*, as there are degrees in the difference of *Longitude*; and then let it be observed whether any point of the *Loxodrome* brought from the Center be under the noted point of the *Meridian*. That is the *Loxodrome* sought, and it sheweth unto what quarter the *Ship* is to be directed that it may arrive from the given place unto the place given; if that there be no point of the *Loxodrome* under the noted point of the *Meridian*, the *Loxodrome* intermedial between those two near to that point must be taken.

But if that the Center of any *Compass* be to be found in neither Parallel of the *Latitude*, from which the *Loxodromes* were drawn, let some *Loxodrome* be chosen which may appear near to that demanded, and let it be brought to one point of the noted *Latitude*, or of the *Meridian*, and let the Globe be turned as before, until that the difference of *Longitude* pass through the *Meridian*. This being done, if that any point of the assumed *Loxodrome* be under either noted point of the *Meridian*, the taken *Loxodrome* shall be that which is demanded. If that such a point be not found, another *Loxodrome* must be taken, and you must do as before, until such an one be found; any point of which being found, let it be removed under the other noted point of the *Meridian*, or at least no long interval from it, and the *Loxodrome* shall be denominated from those nigh it, amongst which it is to be conceived as the midst.

Of Sea Charts.

In *Sea Charts* it is performed after this Mode, as the quarter of one place is found from another, which Method in Maps of equal degrees of *Latitude*, is faulty, but in Maps of unequal degrees of *Latitude* it accurately enough discovereth the *Loxodrome* or quarter unto which the *Ship* is to be Sailed.

As *Mariners* have another Method easy enough, in which by the solution of a plain right angled *Triangle* the *Loxodrome* of *Navigation* is found: but to that Method they use a *Table*, which they call a *Table* of encreasing *Latitude*, of which we have spoken in the the XXXII. Chapter.

see Chap. 32.

CHAP.

CHAP. XL.

Of the chief Problem of the Art of Navigation, viz. of finding out a place in the Maps unto which, the Voyage being performed, we arrive at a certain time, or of finding out the Longitude and Latitude of this place.

Proposition I.

The quarter cannot be known, unto which the *Ship* is to be Sailed, that it may come unto the appointed place, except that the place be known in which the *Ship* was at that time.

WE have said in the former Chapter that this is the chief Problem of the *Mariners Art* concerning the finding out of the quarter, unto which the *Ship* is to be directed, but that cannot be found, except that the place be known, whence the *Ship* is to be directed. Therefore the solution of the Problem for finding out the place is necessary.

Proposition II.

To find the place in the Maps at which the *Ship* arriveth or toucheth at any time.

This is that work which the *Dutch* call *Het besleek in de pas-kaert*. They note with a Pin every day on the Map the place unto which they suppose the *Ship* to have touched, that by this means they may discover in what place they are, and unto what quarter the *Ship* is to be Sailed. They use a threefold Method in this affair, as they suppose this or that, to be more rightly observed.

The finding the place in Maps, at which the *Ship* at any time arriveth.

1. The *Rhumbe* being observed in which the *Ship* was directed from the place of the first day, or from the place given on the Map, or the *Rhumbe* in which the *Ship* was moved; and the quantity in the interior of the *Voyage* made, being observed: these two things being known, the place of the *Ship* is found thus on the Map: Let the *Rule* or *Compass* be taken, and one *Shank* of it be applied to the place of the former day, or from whence the *Ship* departed, i. e. the other *Shank* be applied to the *vicine line*, which representeth the observed quarter or course: let the point of the *Shank* be noted with Chalk, which is imminent over the place of the departure. Then by the interval of the *Compass* let the miles of the performed *Voyage* be taken from the opposite Scale, and let one foot of the *Compass* be put upon the place of the departure, but let the *Rule* be moved on the line of the quarter until the other foot of the *Compass* touch the noted point of the *Rule*. The place of the Map that is subject to that point in that situation of the *Rule*, is that demanded, viz. in which the *Ship* then is.

Pilots without a *Rule*, with two pair of compasses perform the Problem.

But if that you determine to find out more accurately the point on the Map by Calculation, or the place of the *Ship* it self, the Problem shall be this: The *Latitude* and *Longitude* of one place being given, and the quarter being given in which they Sailed unto the other place, with the *Voyage* performed, to find out the *Latitude* and *Longitude* of the other place. For these being found, you may more accurately note the place of the *Ship* on the Map.

Let

Let one *shank* of the *Rule* be applied to the *quarter* observed near the place, and let the other *shank* be placed on the place known (or whence the *Voyage* is begun) and make there on the *shank* a mark with a Chalk. Then let the *shank* applied to the *quarter* be moved, until the other noted point of the *shank* applied to the *quarter* fall in on the Parallel of the observed *Latitude*. For the point of the falling in, is the place sought, *viz.* the place of the *Ship*. But if that there be no Parallel of *Latitude* observed on the Map, let the degrees intercepted between this *Latitude* and the *vicine* Parallel be taken by the interval of the *Compass* on the lateral line. And let the *Rule* in the line of the *quarter*, and one Foot of the *Compass* be moved together in this Parallel, until the other Foot of the *Compass* and the noted *shank* do meet, the point of the meeting sheweth the place of the *Ship*. Seamen use two pair of *Compasses*.

If that you will determine more accurately by the Calculation of the place demanded on the Map or *Earth* itself, the *Problem* is this: The *Latitude* and *Longitude* of one place being given, and the *quarter* in which the *Navigation* is appointed to another place, and the *Latitude* of this place given, to find his *Longitude*: for the *Latitude* and *Longitude* given is the place itself.

3. The quantity of the *Voyage* performed from one known place to another unknown being observed, and the *Latitude* of this other being observed, to find this other on the Maps.

Let the quantity of the *Voyage* performed be taken by the interval of the *Compass* from the opposite Scale. Then if a Parallel through the degree of *Latitude* be observed on the Map, let one Foot of the *Compass* be placed on the noted place, the other Foot on this Parallel. This point shall be the place demanded. But if the Parallel pass not through the degree of *Latitude*, let one *shank* of the *Rule* be applied to the *vicine* Parallel; on the other *shank* let the degree of *Latitude* be noted, and let the *Rule* be moved until the other Foot of the *Compass* toucheth the noted point of the *Rule*. The place of the Map subject to the point in this situation shall be the sought for place of the *Ship*.

If that a more accurate invention is required by Calculation, the *Problem* shall be this: The *Latitude* and *Longitude* of one place being given, and the distance of the other on the line of *Navigation*, and the *Latitude* of this, to find out the *Latitude* of this other. For this being known, when the *Latitude* is observed, you have the situation of the place itself on the Maps, or *Earth*.

The 4th or 5th Method also of finding out of this place is also given, *viz.* in which the *Longitude* of the other or sought for place is supposed to be observed, but the *Latitude* is unknown. But because that very seldom the *Longitude* can be observed on the *Sea*; therefore this Method is omitted as unuseful. He that desireth more concerning this Method let him Read *Snellius*, *Stevens*, *Metius*, and others, that have treated at large of it.

Proposition III.

To conjecture unto what *quarter* the *Ship* is moved, and in what *Rhombe*, although the signs be fallacious.

In the solution of the former *Proposition* for the finding out the place of a *Ship*, those things as noted were taken and observed. 1. The *quarter* unto which the *Ship* is moved, and the *Rhombe*, in which. 2. The way made. 3. The *Latitude* of the place unto which it hath arrived. Now therefore we must shew how these three may be observed on the *Sea*, that they may be used for the finding out of the place. For if that these be not rightly known, or observed, the true place shall neither be found or discovered. First therefore let us see concerning the *quarter* of the course of the *Ship* and the *Rhombe*.

The

The *Pilots* know the *quarter* from the *Compass*, or *Loadstone*. For what *quarter*, or *Rhombe* of the *Compass* agreeth with the Line of the conceived *Longitude* of the *Ship*, the same is put into the *quarter* of the *Ship* to be moved, and to describe its *Rhombe*. For they seldom use the signs taken from the *quarter* of the apparent rising and setting of the *Sun*, which they compute. These signs may be corrupted by divers Causes, so that they may deceive in shewing the *Rhombe* or *quarter*. 1. If that the Declination of the *Magnetic Needle* be uncertain in that place, and therefore the *quarters* of the *Compass* do not shew the true *quarters*. 2. If that the *Sea* in that place, hath a flux to a certain place; for it will carry the *Ship* from the true *Rhombe*, although the *Ship* be directed unto the same *quarter*, the fluxes, and refluxes are the frequent cause of this error. And in many places of the *World*, there is a General Motion of force, and in many places a stated and fixed Motion, from stated winds, by which, especially storms, remove the *Ship* from the *Rhombe* of their *Voyage*, although they ply in the same *quarter*. The fluxes of the *Sea* which are carried towards other *quarters*, and carry the *Ship* with it, as if the *Rudder* or *Helme* cannot be moved by him that steereth unto any *quarter*, as if ought to be, the waves of the *Sea* obstructing of it. All these hinder the *Ship* to be moved in the same *Rhombe*, whose *quarters* are shewed by the *Compass*. But how much it is drawn aside must be learned by conjecture from the vehemency of the Flood, and of its *quarters*, and the like: but the Method is very imperfect.

Proposition IV.

To cast up the *Voyage* made upon the *Rhombe*, to measure it at the given time from the given place.

Pilots conjecture the same. 1. When they observe or know by experience what course a *Ship* is wont to make with such a Wind. 2. If that they have sailed in the same Meridian or vicine Line with any Wind, and have observed the *Latitude* of the place in the beginning of the Motion, and the *Latitude* of the place in the following time. For the difference of *Latitude* turned into miles sheweth the course made for so long a space of time, and such a Wind, Whence for the time given and such a Wind continuing, the course made is collected. 3. With more industry they measure the course performed by a *Boat* and string; one end of which is fastened to the *Boat*, and the other with the *Globe* is in the *Ship*, for the *Ship* remaining immovable, Sailing is permitted to the *Boat* until it be removed 10 or 12 *Orgyas* of the string, and the time elapsed between is observed. And from this for any time of the performed course of the *Ship* is found out.

The signs of the performed Sailing of the *Ship* are corrupted, and rendered uncertain by divers ways; yea are uncertain of themselves, seeing they are mere conjectures. 1. Oftentimes the *Ship* maketh lesser or greater way than the conjectures. 2. Oftentimes the *Ship* maketh lesser or greater way than the conjectures affordeth, *viz.* because in many places of the *Sea* the flux is unto a certain *quarter*, or the *Billows* are rould unto a certain *quarter*. If therefore the *Ship* be directed into the same *quarter*, the way made will be greater than the conjecture maketh it; but if into a contrary, it will be lesser. 3. Because the *Ship* is carried by other Causes into other *quarters*, and so by windings arriveth at another place. 4. The winds are variously changed. 5. By how much a *Ship* hath the greater *Altitude*, by so much its Motion seemeth more slow, though it be not so.

Proposition V.

To observe the *Latitude* of a place unto which a *Ship* is arrived.

The *Seamen* observe it by the *Sun* in the day time, and by the *Stars* in the night, as we have shewed in the XXIII. Chapter, they use Three Instruments, the *Astrolabe*, the *Radius*, and the *Triangle*.

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The *Pilots* know the *quarter* from the *Compass* or *Loadstone*.

The casting up the *Voyage* made upon the *Rhombe*, &c.

See *Snellius*,
Stevens, and
Metius.

See Chap. 23.

Proposition VI.

From whence it is manifest that the Methods used by Seamen to find the places on the Maps unto which they have arrived, are fallacious, because that they can neither be certain of the Rhombe or quarter of the way, or of the quantity of the way made, or of the observed Latitude of the place, yet the observation of the Latitude of the place unto which they are arrived, be cause that it is not less subject to error, especially the Air and Sea being tranquillous, may be exempted from this fallacy.

But from that alone the place it self is not found on the Map or Earth, but a second is required, viz. either a distance from another place given, or a Rhombe by which they Sail from the given place to that, or lastly, the Longitude of the place from this. We have said that the observation of the way made, or distance, is uncertain, as also that of the Rhombs. Therefore they return back to find out the Longitude of the place. For the Latitude and Longitude of the place being known, the place it self is found on the Maps, and determined on the Globe of the Earth.

Whence it is evident that the Art of Navigation requireth the solution of this Problem to the making up of its perfection: viz. to find out the Longitude of the place where we are at any time, and on any day. The prize is propounded, let him win who can.

Proposition VI.

From whence it is manifest that the Methods used by Seamen to find the places on the Maps unto which they have arrived, are fallacious, because that they can neither be certain of the Rhombe or quarter of the way, or the quantity of the way made, or of the observed Latitude of the place, yet the observation of the Latitude of the place unto which they are arrived, be cause that it is not less subject to error, especially the Air and Sea being tranquillous, may be exempted from this fallacy.

But from that alone the place it self is not found on the Map or Earth, but a second is required, *viz.* either a distance from another place given, or a Rhombe by which they Sail from the given place to that, or lastly, the Longitude of the place from this. We have said that the observation of the way made, or distance, is uncertain, as also that of the Rhombs. Therefore they return back to find out the Longitude of the place. For the Latitude and Longitude of the place being known, the place it self is found on the Maps, and determined on the Globe of the Earth.

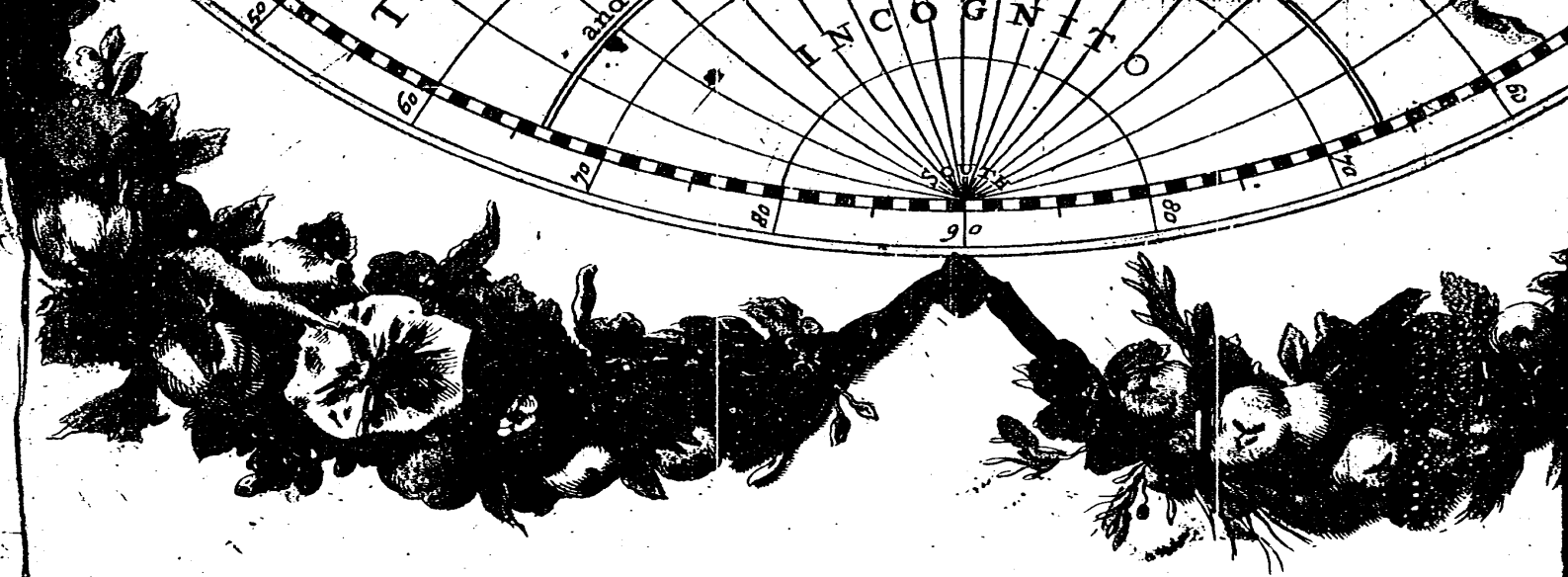
Whence it is evident that the *Art of Navigation* requireth the solution of this *Problem* to the making up of its perfection: *viz.* to find out the Longitude of the place where we are at any time, and on any day. The prize is propounded, let him win who can.

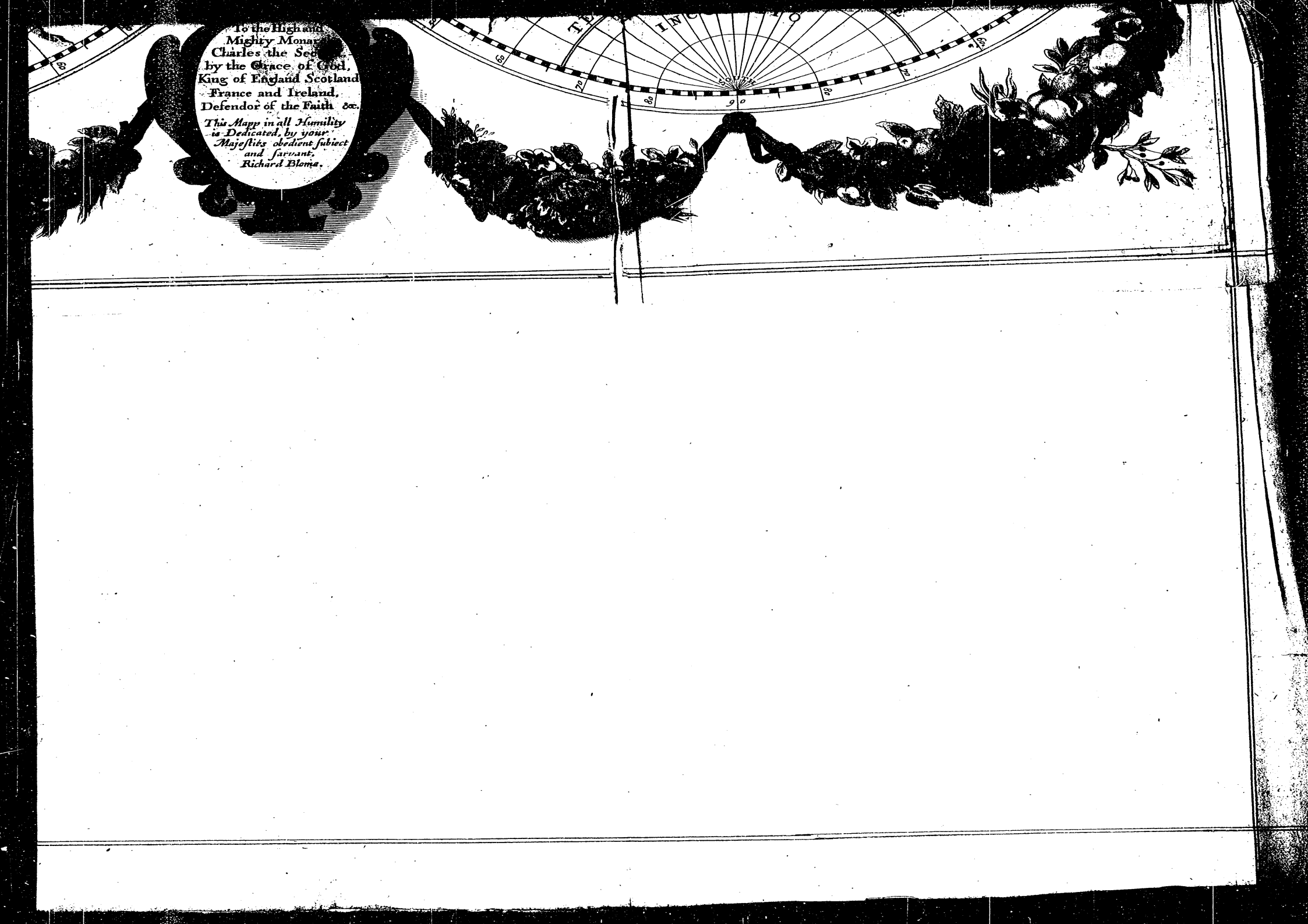

A MAPP or GEN
Designed in two Plaine Hemilphers, By
into English and Illustrated with Fig



This is a historical map of the world, likely a reproduction of a 17th-century map. The map is circular, showing the continents of North America, Europe, Africa, Asia, and Australia. It includes numerous geographical features, cities, and seas. The map is framed by a decorative border with a coat of arms at the top center and a lion at the bottom center. The text "To the High and Mighty Monarch" is visible at the bottom left.

To the High and
Mighty Monarch





To the High and
Mighty Monarch
Charles the Second
by the Grace of God,
King of England Scotland
France and Ireland,
Defendor of the Faith &c.

*This Map in all Humility
is Dedicated, by your
Majesties obedient subject
and servant,
Richard Blome.*

A
**GEOGRAPHICAL
DESCRIPTION
OF THE
WORLD,**

Taken from the
WORKS
Of the Famous
Monfieur SANSON,
Late Geographer to the present *French* King.

To which are Added,
About an hundred **GEOGRAPHICAL** and
HYDROGRAPHICAL TABLES,
of the Kingdoms, Countreys, and Isles in the World,
with their Chief Cities and Sea-Ports; drawn from
the MAPS of the said Monfieur *Sanfon*, and according
to the Method of the said Description.

Illustrated with MAPS.

The Second Part.

By **RICHARD BLOME.**

Printed in the Year, 1680.

Ten Points; of which	Four are called Cardinal Points, as	the North, or the Pole Arctick. the South, or the Pole Antartick. the East. the West.
	Four are called Collateral Points, as	the East of the Summer, the East of the Winter, the West of the Summer, the West of the Winter.
Ten Circles; or Lines, of which	And two, as Above and Under us; as	the Zenith, the Nadir.
	Five are Parallels, the one to the other, as	the Equator. the Tropic of Cancer, the Tropic of Capricorn. the circle of the Pole Arctick. the circle of the Pole Antartick.
Two Colures, in which are 4 Points, which note	The two Polar Circles, as	the Ecliptick. the Horizon rational, the Horizon sensible, or visible. the degrees of Latitude. the degrees of Longitude.
	Five others are in the middle of the Zodiac, as	the Spring. the Autumn. the Summer, the Winter.
Three sorts of Zones, in which are five, to wit	our four Seasons of the year, to wit, above	the Parching. the temperate Arctick, or Northernly, the temperate Antartick, or Southernly, the frozen Arctick, or Northernly, the frozen Antartick or Southernly.
	the colures of the Æquinoxes, as	Amphisciens. Northern Heteroscien, Southern Heteroscien. Northern Periscien, Southern Periscien.
Three sorts of Shadows,	the colures of the Solstices, as	Periscien. Antiscien. Antipodes. dia (that is, through) Merces, dia Siens, dia Alexandrias, dia Rhodon, dia Pontou, dia Boristhenou, dia Ripheon, dia Danias.
	one Torrid, or	24, by half hours, 6, by Months. 48, by quarters of hours. 12, by fourteen days.
Three sorts of Positions, as	two Temperate, as	North, South, East, West.
	two Frozen, or Cold, as	North-east, North-west, South-east, South-west.
The Climates; of which	which diversly receive the Inhabitants of the five Zones, for they are	North North-east, North North-west, South South-east, South South-west, East North-east, East South-west, West North-west, West South-west.
	the Ancients first made seven	North, and a quarter by North-east, North, and a quarter by North-west, North-east, and a quarter by North, North-west, and a quarter by North, South, and a quarter by South-east, South, and a quarter by South-west, South-east, and a quarter by South, South-west, and a quarter by South, East, and a quarter by North-east, East, and a quarter by South-east, North-east, and a quarter by East, South-east, and a quarter by East, West, and a quarter by North-west, West, and a quarter by South-west, North-west, and a quarter by West, South-west, and a quarter by West.
The Parallels; which are	then nine, in adding	a Point. a Line. an Inch, or Thumbs breadth. a Foot. a Geometrical Pace. a Stade, or certain measure of ground. one thousand Roman Paces, or the Italian Mile. an English Mile. a Scotch Mile. a common League of France. a Spanish League. a Dutch League, or Miles. a Swedish League, or Miles. an Hungarian League, or Miles. a degree of Latitude on the Æquator. the great circle of the Terrestrial Globe. the Superficies of the Terrestrial Globe.
	the Moderns made 30, to wit	
The Winds; whereof the	following the Ancients 14, between the Æquator and Polar circle	
	following the Moderns 60, between the Polar circle and the Pole	
The Measures; in which are to be con- sidered, that	4 Firfts, and whereof the names are Monosyllables, shall be called	Cardinal Winds, as
	4 Seconds, and whereof the names are of two syllables, and composed of two of the four Firfts, shall be called	Collateral Winds, as
	8 Thirds; and have their names of three syllables, composed of one of the four Firfts, and of one of the four Seconds, as	
	16 Fourths; taking their names from four Firfts, or four Seconds, in saying of one fourth part by the other, and that without having regard to the eight Third winds, &c. as it were	
	the least part that can be described upon the Terrestrial Globe, is many Points, described and continued right the one to the other, make twelve Lines continued together, are esteemed to make	
	twelve Inches, make	
	two Foot and half make a common Pace, and two common Paces	
	one hundred twenty five Geometrical Paces, make	
	eight Stades, or one thousand Geometrical Paces, is	
	one thousand fifty six Geometrical Paces make	
	one thousand two hundred sixty seven Paces make	
	two thousand four hundred, or 2500 Geometrical Paces make	
	three thousand four hundred Geometrical Paces, or little more, make	
	four thousand Geometrical Paces, make	
	five thousand Geometrical Paces, make	
	six thousand Geometrical Paces, make	
	24 or 25 French Leagues, or 60000 Geometrical Paces make	
	three hundred and sixty degrees of Longitude on the Æquator, make	
	the great circle of the Terr. Globe, multiplied by his Diameter, make	

Hydrographic TABLES.

The

In our Continent, and its Isles, are, to wit in	EUROPE, and in the Kingdoms, Countreys, or Regions of	Spain; as	the Douro, the Tagus, the Guadiana, the Guadalquivir, the Ebro, or Iberus.
		Italy; as	the Tiber, the Arno, the Po.
		Turkey in Europe; as	the Danube, or Donaw, the Drin, the Orfee, or Alfee, the Vardar, the Marize, the Loire, the Garone, the Rhofne, the Seyne, the Elcault, the Meufe, the Rhine, the Wefer, the Elbe, the Oder.
		France; as	the Weiffer, or Viftule, the Niemen, the Duna, or Dzwina, the Niefter, the Nieper, or Boriftene.
		Low-Countreys; as	the Torne, the Wolga, the Dwine, the Don, or Tana.
		Germany; as	the Thames, the Severn, the Trent, the Tay.
		Poland; as	the Shennon, the Euphrates, the Pactolus, the Tygris, the Acheron, the Jordaine, the Oronces, the Lali, the Chryforbous, the Araxes, and the Farax.
		Sweden; as	the Caybar, and the Affan.
		Moscovia; as	the Tiritiri, the Gehun, the Bendimir, and the Toftar.
		England; as	the Indus, the Tapra, the Ganges, the Gemeni, the Mecon, and the Pegu.
The most famous RIVERS	A S I A, and in the Kingdoms, Countreys, or Regions of	Scotland; as	the Quitan, or Janfiquiam, the Oby, the Gehan, the Tartar, the Palifanga, the Jenifey, the Albiamu, the Chefel, and the Jaick.
		Ireland; as	the Tensit, and the Sus.
		Turkey, in Asia, as	the Ommiraby, Suba, the Mullulus, and the Cherfer.
		Georgia; as	the Mulvia, the Maber, the Magrada, the Capes, the Rio Major, the Chiol, the Suffegmarus, the Mafurius, the Tefiffus, and the Mina.
		Arabia; as	the Nile.
		Persia; as	the Suz, the Buzedora, the Darha, and the Albus.
		India; as	the Ghir, and the Equeftris.
		China; as	the Senega, the Gambia, the Rio Grande, and the Cano.
		Tartaria; as	the Quilmanci, Nubia, the Zaire, and the Marabus.
		Morocco; as	the Curama, the Barame, the Spiritu Santo, the Rio dos Infantos.
In the other Continent, or in	AFRICA, and in the Kingdoms, Countreys, or Regions of	Fez; as	Canada, or New France; as thofe of
		Barbary; as	Florida; as thofe of
		Egypt; as	Mexico, or New Spain; as thofe of
		Bilidulgerid; as	
		Zaara; as	
		the Negroes; as	
		Higher Aethiopia; as	
		Lower Aethiopia; as	
	AMERICA Septentrionale and in the Kingdoms, Countreys, &c. of	the Niger, which is divided in	Canada, or St. Lawrence, Toppahanock, Penobfcor, Pautuxat, Nanfand, Chafepac, or Pouharan, May, la Trinite, Apamatuck, Pamanuc, and Patawomeck.
			Rio de Flores; Rio de Spiritu Santo, Rio de Neves, and Rio grande, Spiritu Santo towards the East, Spiritu Santo towards the West, Panuco, Guaxacoalco, Baranja, Zacatula, Defiguadero of Nicaragua, Darien, Viapoco, St. Martha, Cayanna, Corritine, Brebice, Orinoque, Apuruvaca, Effiquebe, Madelaine, Defiguadero of Peru, Orethane, or the Amazon, Maragnon, or Miar, Taboucorou, Rio Janiero, Rio grande, or Potengi, Rio Real, Farayba.
	AMERICA Meridionale, and in the Kingdoms, Countreys, &c. of	Terra Firma, Guiana, and Peru; as thofe of	Paraguay; as thofe of

All

Anciently, and in our Continents; as	EUROPE, with its Kingdoms, Estates, Isles, &c. may be considered in three times three parts, and then	The three most Southern parts, are the Kingdoms, Estates, and Isles of	Spain and Portugal, with its Isles of Majorca, Minorca, &c. Italy, with its Estates and Isles of Sicily, Sardinia, Corsica, Isles of Naples, &c. Turkey in Europe, with its Estates and Isles.
		The 2 Innermost parts, and within the Continent, are the Kingdoms and Estates of	France, Germany, and Belgium, with its several Estates; as the Swiffes, the Grifons, &c. Poland, with its several Estates, towards the Danube, as Transylvania, Moldavia, &c.
		The three most Northern parts or Kingdoms, and Isles of	Great Britain, and Ireland. Denmark, Sweden, Norway. Moscovy, with its Dutches and Kingdoms.
Known	A S I A, with its Kingdoms, Countreys, Isles, &c. as they are found	In firm Land; as	Turkey in Asia, with its Countreys, Isles, &c. Georgia, Arabia, Persia. India, as it is divided into the Empire of the great Mogul; Peninsula of India, within the Ganges; into the Peninsula of India, without the Ganges. China, Tartaria, the Land of Jessy, the Land of Papous.
		In Isles; as	Isles of Japon, Isles of Larrons, Isles of Sonde, Philippine Isles, Isles of Ceylan, and the Maldives. In the Mediterranean Sea; as the Levant Sea, Sea; as About China, Persia, Arabia, &c.
Lately, and in the other Continent; as	AFRICA, with its Kingdoms, Isles, &c. as it is divided and found in	Africa, or Lybia	Exterior, or outwards; as Barbary, Bilidulgerid, Egypt. Interior, or inwards; as Zaara, or Defart, the Countries of the Negroes, Guinea.
		Aethiopia	higher; as Nubia, Aethiopia, or the Empire of the Abyssinians. lower; as Congo, Monomotapa, Caffres.
		And divers Isles, which are found	In the Mediterranean Sea; as the Isle of Malta, &c. In the Western Ocean; as the Canary Isles, the Isles of Cape Verde, the Isles of St. Thomas, the Isle of Madagafcar, the Isle of Zocotorin, &c.
Unknown, or not fully discovered, and lieth either under the	AMERICA, with its Kingdoms, Regions, Countreys, Isles, &c. as they are divided, and found in	America Septentrionale; as	the Artick Lands; as Greenland, Estland, Island, &c. Canada, or New France, with its Estates; Isles, &c. Florida. Mexico, or New Spain, with its Audiences of Mexico, Guadalajara, and St. Domingo. the Caribbe Isles. Terra Firma, with its Estates, Provinces, and Isles. Guiana.
		America Meridionale; as	Peru, with its Audiences of Quito, Lima, Dela Plata. Chili, with its Jurisdiccions. Brazil, with its Capitane, Paraguay, or Rio de la Plata, with its Parts or Provinces, the Magellanick Land, &c.

EUROPE

EUROPE,
with its
Kingdoms,
Isles, &c.
may be
considered
in three
times three
parts; and
then

The three In-
nermost
parts, and
within the
Continent,
are

The three
most Nor-
thern parts,
Kingdoms
and Isles, are

SPAIN, with its Kingdoms or Principa-
lities, viz.

ITALY, with its several Estates and
Principalities; the Chief of which are

TURKEY (in EUROPE,) with its
several Estates; the Chief of which are
those of

Together with
several Isles, as
they lie in the

Egean, or Grecian Seas, as
Ionian Seas, as
Adriatick Seas, as

FRANCE, with its twelve Governments,
or General Estates; viz.

The several Estates, which lie
between

France,

Germany,

GERMANY, with its several Estates and
Principalities; the chief of which are

POLAND, with its several Estates; the
chief of which are

And some Estates or Principalities, towards
the Danube and Black-Sea, as

SCANDINAVIA; where are the King-
doms and Estates of

Danemark,

Sweden,

MOSCOWIA, with its several Kingdoms,
Dutches and Provinces; the chief of
which are

THE ISLES of GREAT BRITAIN;
where are the Kingdoms of

Castile,
Leon,
Navarr,
Biscay,
Aragon,
Gallicia,
Portugal,
Algarve,
Andaloussa,
Granada,
Múrcia,
Aragon,
Valencia,
Catalonia,
the Isles of Baleares,

Piedmont,
Millain,
Genoua,
Parma,
Mantua, and Modena,
Venice,
Toscany,
Estare of the Church,
Naples,
Isle of Sicily,
Isle of Sardinia,
Isle of Corsica,

Bosnie,
Seryie,
Bulgaria,
Roumania,
Macedonia,
Theffale,
Epire,
Achata,
Peloponnesus,
Dalmacie,
Sclavonia,
Illyris,
Croatia,
Negroponte, Cret, the Isles
Zant, Zeffalonia, Corfu, &c.
Zara, Lefina, Curzola, Lissa, &c.

Picardy,
Normandy,
Isle of France,
Champagne,
Brelagne,
Orlenois, &c.
Bourgogne,
Lyonnois, &c.
Guyenne and Gascogne,
Languedoc,
Provence,
Dauphin,
the Catholick Low Country,

Lorraine,
the French County,
Savoy,
the Low Countreys, or the
United Provinces,

the Swisses,
the Grisons,
On this side the Rhine,
Beyond the Rhine,
Westphalia,
Franconia,
Sovabe,

Bavaria,
Austria,
Bohemia,
Higher Saxony,
Brandenbourg,
Pomerania,
Lower Saxony,

Polonia,
Prussie,
Mazovie,
Lithuania,
Volhynia,
Podolia,
Rusia Nigra,

Hungaria,
Transylvania,
Valaquie,
Moldavia,
Little Tartaria,

Danemark,
Norway,
Gothland,
Sweden,
Finland,
Livonia,

Moscovy,
Wolomodire,
Dwine,
Cazan (Kingdom)
Astracan (Kingdom)

England,
Scotland,
Ireland,

Madrid,
Leon,
Pampelona,
Bilboa,
Oviedo,
St. Jago de Compostela,
Lisbon,
Pharo,
Sevill,
Granada,
Murcia,
Caragofa,
Valencia,
Barcellona,
Majorca,

Turin,
Millain,
Genoua,
Parma,
Mantua,
Venice,
Florence,
Rome,
Naples,
Messina,
Calari,
Bastia,

Jaycza,
Belgrad,
Sophia,
Constantinople,
Salonichi,
Armicho,
Perveza,
Selines,
Petras,
Rhagusa,
Pofega,
Zatha,
Sifleg,
of Cyclades, &c.

Amiens,
Roen, or Roven,
Paris,
Troys,
Nantes,
Orleans,
Dijon,
Lyon,
Bordeaux,
Toulouse,
Marfeille,
Grenoble,
Anvers,

Metz,
Besancons,
Cambery,
Amsterdam,
Rotterdam,

Basle,
Coire,
Strasbourg,
Cologne,
Munster,

Noremberg,
Ansbourg,
Munchen,
Vienna,
Prague,
Dresden,

Berlin,
Stetin,
Hamburg,
Cracow,
Dantzick,

Warsaw,
Wilna,
Kyovia,
Kamieniec,
Loewenberg,

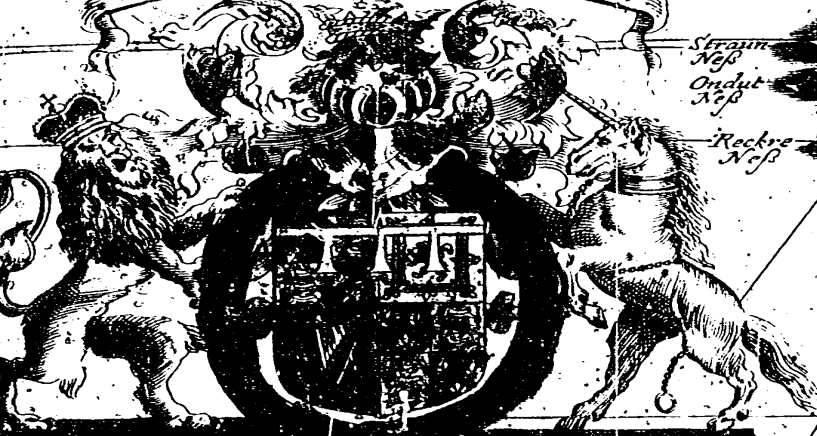
Buda,
Hermenstap,
Targovisko,
Soczowa,
Nigropoll,

Capenhagen,
Trondhem,
Calmar,
Stockholm,
Abo,

Kiga,
Mosco,
Wolodomer,
St. Michael Archangel,
Cazan,
Astracan,
London,
Edinburgh,
Dublin.

S E P T E N T R I O N

To the High and Mighty Prince James Duke of York &
 Albany Marquess of Ormonde Earl of Ross &
 Armandale, &c. &c. Admiral of England & of the
 most noble order of the Garter, my Brother &
 Counsellor & his most Sacred Majesty Charles the
 third, Mapp as Respectfully Dedicated by Rich: Blomfield

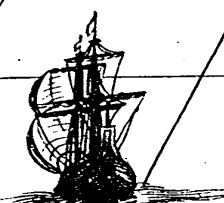


A MAPP of EUROPE

*Designed by Monsieur Sanson,
Geographer to the French King; and
Rendered into English and Illustrated by
Ric: Blome, By his Maj^{ty} Especiall Command
London.
Printed for Rich: Blome &c.*



A T L A N =



Т И Ц К

SEA · Lisbon



OCCIDENTAL

Isles of Ferro

Schettland

Orcades **Illes**

ISLES

 $\mathbf{R}^T \mathbf{I}$

THE

SEA

$$\mathbf{T}^1 \mathbf{H} \mathbf{E} =$$

S P A

~~N-I-S-H~~

SEA.

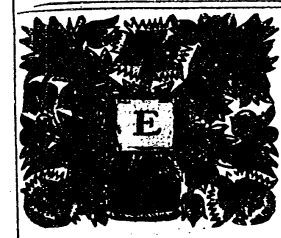
ME







EUROPE.



UROPE is one of the three parts of our Continent, of which *Asia* makes the most Eastern, *Africa* the most Southern, and *Europe* in regard of them is between North and West.

It is for the most part bounded by the *Ocean* and the *Mediterranean Sea*; that which we call the *Septentrional*, or *Frozen Ocean*, on the North; and the *Occidental*, or *Atlantick Ocean*, on the West: The *Mediterranean Sea* (which is but an Arm of the *Ocean*) lies on its South, and separates it from *Africa*; but from *Asia*, it is separated towards the East by divers *Seas*, which fall into the *Mediterranean*, by several *Streights* between these *Seas*, to wit, the *Archipelago*, the Sea of *Marmara*, the *Black Sea*, and the Sea of *Zabague*. Between the *Archipelago* and the *Marmara*, is the *Streight of Gallipoli*, or the *Dardanelles*, or the *Hellspontus*; between the *Marmara* and the *Black Sea*, is the *Streight of Constantinople*, or the *Channel of the Black Sea*; and between the *Black Sea* and the Sea of *Zabague*, is the *Streight of Caffa*, or *Vospero*. Then the Rivers of *Don*, *Volga*, and *Oby*, complete the division of *Europe* from *Asia*, by drawing a line from the one to the other.

The situation of *Europe* is between the 35 and 72 degrees of *Latitude*; and between the 10 and 100 of *Longitude*, though it fill not all this space; and it is almost all in the *Temperate Zone*, no part in the *Torrid*; but some under or near the *Frozen Zone*.

But the *Ocean*, together with the divers *Seas* which encompass and divide the parts of *Europe*, have given so great an advantage to its People, that they are long since become the most expert in the World in *Navigation*, all *Arts* and *Sciences*, and in *Arms* and *Military Discipline*.

We will consider *Europe* in Nine (or three times three) principal parts: And of these, the first three shall be *Spain*, *Italy*, and the *Estates of Turkey* in *Europe*; and these possess the Southern part of *Europe*: the second three parts shall be *France*, *Germany* and *Poland*, and these take up the middle part of *Europe*; and the third shall be *Scandinavia*, where are the *Estates of Denmark* and *Sweden*, *Russia Alba*, or *Muscovia*, and the *Isles of Great Britain* and *Ireland*; and these are most Northward. As to the several small *Isles*, I shall comprehend them under one and the other of these 3 parts, and that according to their situation or vicinity unto them.

Besides these 9 parts, there will remain some *Estates* and *Lands* between *France*, *Germany*, and *Italy*; likewise between *Germany*, *Poland*, *Turkey* and *Moscovia*; and some in *Turkey*, which shall be described as occasion presents.

But before we proceed to the Parts, let us consider that there are 3 principal *Tongues*, and as many principal *Religions* in *Europe*, viz. the *Latin*, which extends it self into *Italy*, *France*, and *Spain*, though in divers *Idioms*: the *Teutonic* into *Germany*, the *British Isles*, and *Scandinavia*: the *Slavonian* into *Poland*, *Moscovy*, in good part of *Turkey*, *Bohemia*, &c. though still in several *Idioms* and *Dialects*. The other *Tongues* are much less general, as the *Greek*, *Arabian*, *Hungarian*, and the *Tartaresque* in the Eastern parts; and lastly, the *Basque*, *Welsh*, *Irish* and *Laplandish*, in the most Western and Northern parts.

The *Religions* are the *Protestant*, which hath spread it self where the *Teutonic Tongue* is spoken; the *Roman Catholic* is almost every where with the *Latin*; *Schism*, alone and every where amongst the People speaking *Slavonian* and *Greek*; the *Mahometan Religion* is among the *Natural Turks* of *Europe*. But to proceed to its Parts.

B

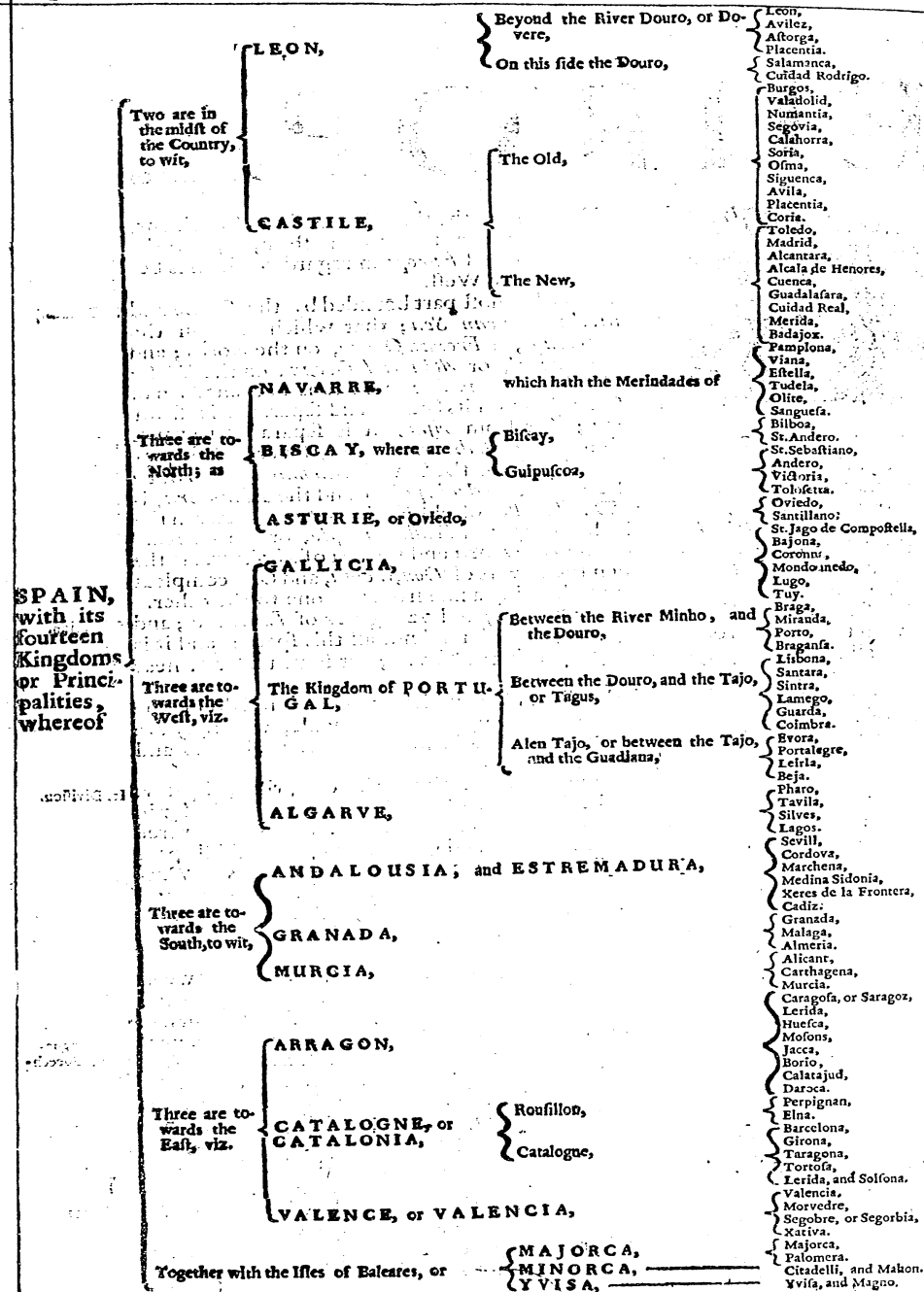
SPAIN,

its Bound.

its Division.

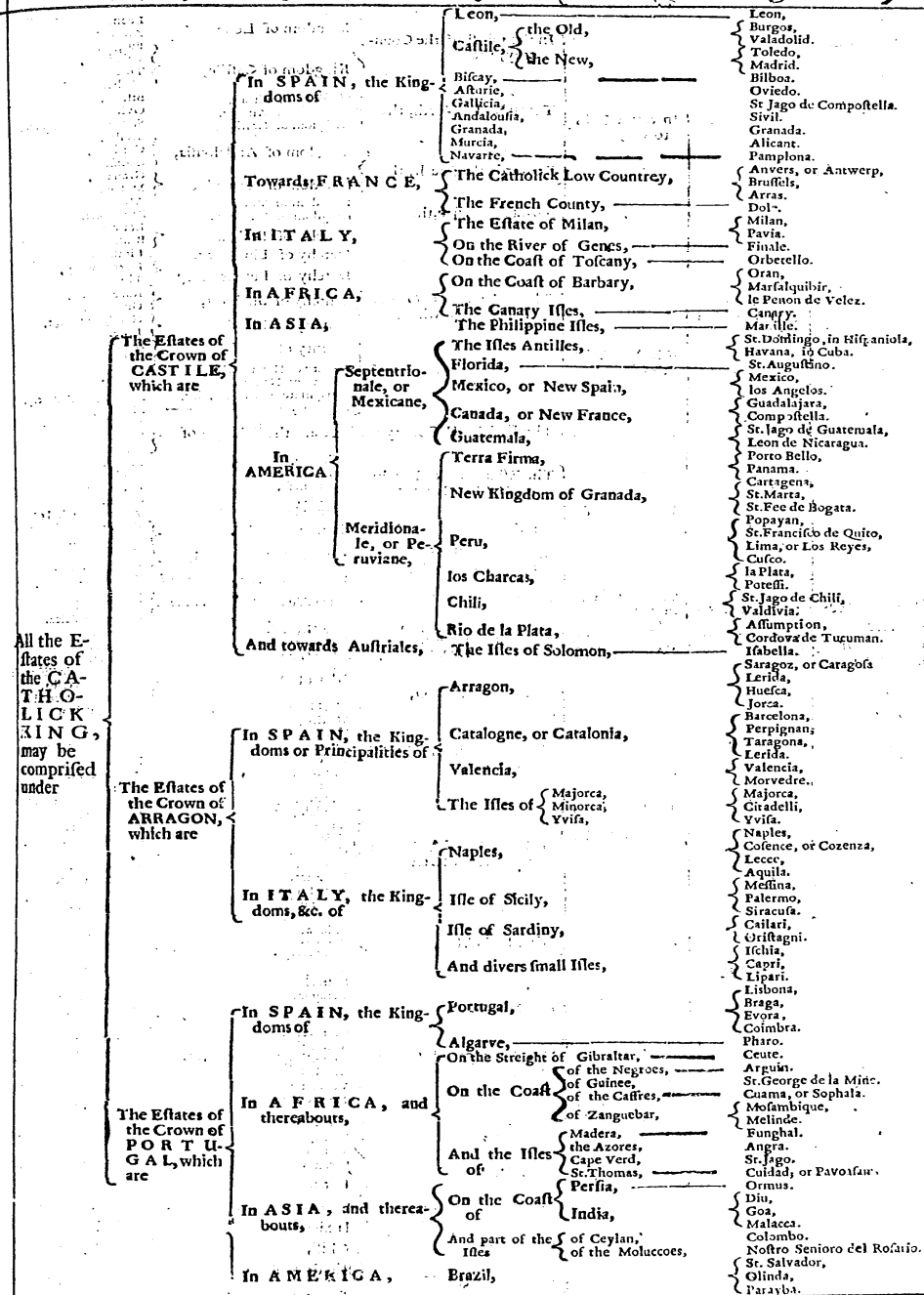
The Language or Speech.

Religions.



All

The Estates of the Crown of the Catholick King.



The Estates of the Crown of ARRAGON.

The

The

The
Estates of the
Crown ofPOR-
TUGAL,
are

In EUROPE,
the PORTU-
GALS or
Kingdom of
PORTUGAL
comprehend-
eth three Re-
gions, six Pro-
vinces, twenty
Almoxarifatz;
(that is, Courts
of Audience,
or for the Re-
ceipt of the
Kings' Reve-
nue) 18 Cities,
more than 400
walled Towns,
200 Boroughs,
4000 Parishes.
The Regions
are

Between the
Rivers MIN-
HO and DOU-
RO; where are
the Provinces
of

Between the Rivers
MINHO and DOURO,
which comprehend
the Almoxarifatz of

TRA-LOS MONTES,
which comprehendeth
the Almoxarifatz of

Between the
Rivers DOU-
RO and TA-
JO; where are
the Provinces
of

ESTRE MADURA,
which containeth the
Almoxarifatz of

BEIRA, which hold-
eth the Almoxarifatz
of

ALEN-
TAJO, or be-
tween the Ri-
vers TAJO
and GUADI-
ANA; where
are the Pro-
vinces of

ALEN-TAJO; which
holdeth the Almoxari-
fatz of

ALGARVE; and
the Almoxarifatz of

In AFRICA;
and

On the Coasts of

The Isles of

Divers E-
states, King-
doms, Isles,
Cities, &c. in
the other parts
of the one and
the other Con-
tinent; among
the which are

In ASIA;
and

On the Coast of

The Isles, or part of
the Isles of

In AMERI-
CA; and

In BRAZIL, the
fourteen Capitancies,
or Governments of

Porto,
Viana de Foz,
Ponte de Lima,
Guimaranes,

Miranda,
Torro de Mensorvo,
Villa Real,
Pinhel,

Lisbona,
Santarein,
Tomar,
Alenquez,
Leiria,

Setubal,
Coimbra,
Guarda,
Lamego,
Viseu,
Aveiro,
Castel Branco,

Evora,

Beja,

Elvas,

Portalegre,

Estremoz,

Tavila,

Lagos,

The Kingdom of Fez,
The Kingdom of Morocco,
The Countrey of Negroes,
Sierre Leone,
Guinee,

The Kingdom of Angola,
Caffreria, or Cafres,

Zanguebar,

Madera,
Azores,
Cape Verd,
St. Thomas, &c.

Arabia,
Persia,

Cambay,

Decan,

Cuncan,

Canara,

Malabar,

Choromandel,

Pegu,

Malacca,

China,

Ceylan,

Manar,

Moluccoes,

Japon,

Para,

Maranhan,

Ciara,

Rio Grande,

Parayba,

Tamaraca,

Fennambuco,

Seregippa,

Bahia de Todos los Santos,

los Illecos,

Porto Seguro,

Spiritu Santo,

Rio Janiero,

St. Vincent.

Porto,
Caminha,
Viana de Foz de Lima,
Barcelos.

Ponte de Lima.
Braga,
Guimaranes.

Miranda,
Bragança,
Torre de Mensorvo,

Chiaves,
Villa Real,
Castel Rodrigo,

Pinhel.
Lisbona,
Santarein.

Tomar.
Alenquez,
Sintra.

Leiria.
Setubal,
Cezimbra,

Almada,
Palmela,
Alcazer do Sal.

Coimbra.
Guarda.
Lamego.

Viseu.
Aveiro.
Castel Branco,

Salvatierra,
Indanha.

Evora.

Beja,

Serpa,

St. Jago de Cacem,
Mertola,

Ourique.
Elvas,
Olivensa,

Mourao.
Portalegre,
Crato.

Estremoz, and Avis.
Pharo,

Tavila.
Silves, and Lagos.

Centa.
Mazagan.

Arguin.
Cachieu.

St. George de la Mina,
St. Pol de Loanda,

Cambambe.
Cuama, or Soffala,

Mozambique,
Malinde,

Monbaza.
Funghal.

Angra.
St. Jago.

Pavosam.
Mafcate.

Ormus.
Diu,

Daman,
Bazaim.

Chaul.
Goa.

Barcelor.
Cananor,

Cranganor,
Cohin,

Coulan.
Negapatan,

Maffapour, or St. Thomas.
Sirian.

Malacca.
Macao.

Colombo.
Manar.

Noffro Seniors del Rozaria.
Meliapon.

Para.
Maranhan.

Ciara,
Rio Grande, or Potengi.

Paraba.

Tamaraca.

Olinda.

Seregippa.

St. Salvador.

Porto Seguro.

Spiritu Santo.

St. Sebastian,

Santos.

SPAIN.



The Bay of Biscaye

SPANISH

SEA

A General Mapp of the Kingdom
SPAIN
By Monsiur Sanson Geographer to the
French King

Scale of Geographical miles
Scale of Spanish leagues
Scale of French leagues

PART
OF
AFRICA

The Straights of Gibraltar

SPAIN.

THE Kingdom of *SPAIN* is almost quite encompassed with the *Ocean* and *Mediterranean-Sea*; and the *Pyrenean Mountains* separate it from *France*. These Mountains are that *Isthmus* or neck of Land, that uniteth *Spain* to the Continent; and serveth as a defence and bound for this Kingdom and *France*; and the Inhabitants that here reside, are a sort of rude and Barbarous people.

Spain, taken conjoynly with *Portugal* (which though a particular Kingdom, hath been always taken as a Member thereof) extends it self from the 35th degree of *Latitude* unto almost the 44th; and from the 9th degree of *Longitude* to the 24th.

It is seated in the most Southernly part of the North *Temperate Zone*, the longest Summers-day making 15 hours. It is a Country not over fertil in Corn or Cattel, which doth occasion the People to order their Diet accordingly; their chief food being *Sallets* and *Fruits*, the product of the Earth, so that with a small piece of *flesh*, they will make two or three Dishes; and above all their *Oleums* are esteemed as an excellent dish. But in recompence of the defect of Corn and Cattel, the Country produceth divers rich Commodities; as *Wines*, *Oils*, several *Mettals*, *Rice*, *Cork*, *Soda Barrellia*, *Shumack*, *Soap*, *Anchoves*, *Hony*, *Wax*, *Woad*, *Coriander*, *Saffron*, *Annisecds*, *Raisins*, *Almonds*, *Oranges*, *Lemmons*, *Liquorice*, *Wool*, *Lamb-skins*, raw *Silk*.

Situation.

Its Commodities.

Spain received its first People from *Celtes*, whence came the name of *Celti*; then the *Phenicians* and *Carthaginians* possessed the most Southern parts nearest to *Africa*, and endeavoured to make themselves Masters of all the Country. The *Romans* drove them out, and posselt it wholly, and in the declension of their Empire, the *Goths*, *Vandals*, *Sueves*, *Alains* and *Silinges* settled here, and parted it amongst them. The *Goths* in the end remained sole Masters, till such times as the *Moors* vanquished them, and forced them to retire to the Mountains of *Leon*, the *Asturias*, and *Gallicia*. The People now inhabiting in *Spain* are of a swarthy complexion, black hair'd, and of a good proportion; they are very stately in all their Actions, of a Majestick gate, in their carriages are very grave and serious; to their King are very obedient, true and loving; in Adversity, patient; they are much addicted to Women; are great braggers, and exceeding proud, though scarce Masters of a single *Ryal*. In matters of Religion, they are *Roman Catholicks*, in which they are very devout, not admitting the publick exercise of any other Religion throughout the Kingdom.

The several Inhabitants.

Spain is divided into fourteen Kingdoms or Principalities, which are set down in the *Geographical Table* of the said Kingdom; and to these fourteen Principalities, we may add the Isles of *Baleares*, seated in the *Mediterranean Sea*, which comprehendeth *Majorca*, *Minorca*, and *Tvifa*: and all these Kingdoms have formerly been reduced into three *Estates*, which they call, *Castile*, *Arragon*, and *Portugal*. But to proceed to its several parts.

LEON,

Kingdom of
Leon.

LEON, called by some the Kingdom of *Leon* and *Oviedo*, hath for its chief places, 1. *Leon*, by some called *Legio*, as supposed that the eleventh *Legion* quartered here, which was called *Legio Germanica*: 2. *Avilez*, seated on the Sea-shoar: 3. *Salamanca*, of note for having the most famous Academy of all *Spain*: 4. *Astorga*; and 5. *Placentia*.

Kingdom of
Castile.

CASTILE, severed into the Old and the New, or first and last gained or conquered from the *Moors*. The Old *Castile* is seated Northwards of the New, and hath for its chief places, 1. *Burgos*, famous, as contending with *Toledo* for the primacy of all *Spain*: 2. *Valadolid*, a neat and fair City and a University, honoured with the Birth-place of King *Philip the Second*, who erected a Colledge for the *English Papistical Fugitives*. 3. *Numantia*, famous for defending it self against the *Romans* for fourteen years, and at last left *Scipio* nothing else, but a pile of *Alhes* for his Triumph, and 4. *Segovia*, a place of note for Clothing, here made. The New *Castile* boasts of *Madrid* for its chief place, though but a Village, but is the greatest in all the World, and may compare with many Cities in *Europe*; and its Territory, although neither pleasant nor abundant, yet is made both, by the residence of the Kings of *Spain*. 2. *Talado*, seated on the *Tagus*, and almost in the heart of all *Spain*; a fair City, beautified with stately Edifices; its Walls are strong, whereon are placed about fifty Towers of Stone: It is honoured with a University, famous for the study of the *Civil* and *Canon Laws*. 3. *Alcantara*, of note for its Order of *Knights*, so called. 4. *Alcala de Henares*, dignified with an University: And 5. *Cuenca*, seated at the Spring-head of the *Xucar*, nigh to which is the stately Palace of the *Escorial* or *St. Lawrence*, built by King *Philip the Second*; a place, of such magnificence, that neither times past, came near it, nor present, doth equal it. In this large and stately structure are Eleven several *Quadrangles*, every one incloistred, all expressing a *Peruvian Treasure* that have been spent in the building them, and is of such beauty and magnificence, that a voyage to *Spain* were not lost to see it.

Kingdom of
Navar.

NAVAR, for Antiquity may claim the second place of all the fourteen Kingdoms: It hath for its Eastern bounds the *Pyrenean Mountains*. Its chief places are, 1. *Pamplona*, a place more famous for her *Fortification*, than her *Negotiation*: 2. *Viana*, once the Title of the Prince of *Navar*, near which *Cesar Borgia* was slain by an *Ambush*: 3. *Estella*; 4. *Tudela*; 5. *Olite*; and 6. *Sanguessa*; all good Cities. This Country was one of the first, that with success opposed the *Moors*.

Seignory of
Biscay.

BISCAY, by reason of its Mountainous and Woody situation, is the only Country of all *Spain*, that remained unconquered by the *Moors*; and for its many *Iron-Mines*, is called the *Armory* of *Spain*. The chief places are, 1. *Bilboa*, a Town of great Trade, Riches, and much frequented by Merchants, seated two miles distant from the Ocean, and aboundeth in *Wines*, *Cattle*, and the best *Blades*, known by the name of *Bilboa-Blades*. 2. *St. Sebastian*, another noted Town for Traffick: 3. *Andero*; all Sea-port Towns; 4. *Victoria*; and 5. *Tolofeta*; Cities of some account.

Kingdom of
Asthur.

ASTURIE, or *Oviedo*, hath for its chief place, *Oviedo*; which gave name to the Territory, which conjoyns with that of *Leon*.

Kingdom of
Gallicia.

GALEICIA, a Mountainous Country, like *Asturie*; hath for its chief places, 1. *St. Jago de Compostella*, or *St. Jago*, in honour of *St. James*, who here lieth interred; it is honoured with the See of an *Archbishoprick*, and an *University*; and in one of the Churches are kept the Relicks of *St. James*, which are much revered: 2. *Bajona*, seated at the Mouth of the River *Minus*: 3. *Coronna*, not far from the Promontory of *Nerius*: 4. *Mondonnedo*; 5. *Lugo*; and 6. *Tuy*, seated on the River *Minho*.

The

The Kingdom of PORTUGAL.

This Kingdom of *Portugal*, as united with that of *Algarve*, and divided from the Dominions of *Castile*, contains the Kingdoms of *Portugal* and *Algarve*. It enjoyeth a sweet and healthful Air; for most part is hilly, and not very grateful to the Husbandman; but that defect is recompensed by their abundance of *Wine*, *Oil*, *Fruits*, *Hony*, *Fish*, *White Marble*, *Salt*, *Al-lom*, &c. which are the product of the Country.

This Kingdom is about 320 Miles in length, and about 120 in breadth, in which compass, are said to be about 1460 *Parishes*, and many *Nunneries* and *Religious Houses*. Its *Fruits* are excellent, by reason of which here are abundance of *Confectioners*: It is well watered with *Rivers*, having near 200 great and small, the chief of which is the *Tagus*.

The People are esteemed more honest, plain, and of a simpler behaviour than the rest of *Spain*, and more devout in matters of Religion.

The chief Places in this Kingdom are 1. *Lisbona*, said to be built by *Ulysses* in his ten years Travels, seated on the *Tagus* convenient for Navigation, and of a great resort and trade; it is in compass about seven miles, in which may be numbred about twenty thousand well built Houses, and hath thirty and odd *Rarish Churches*; and on its Walls are about sixty *Turrets* and *Towers*, which renders a pleasing shew to the Beholders; towards the Continent, it is seated on five small Hills, betwixt which is a Valley which runs down to the River *Duero*, whose entrance is defended by a *Castle*: and this City being the *Metropolis* of the Kingdom, is the residence of the Kings of *Portugal*, and the See of an *Archbishop*. 2. *Braga*, once the chief of the Kingdom, now dignified with the See of an *Archbishop*. 3. *Miranda*, seated on the *Duero*, an *Episcopal See*. 4. *Santaren*, seated on the *Tagus*. 5. *Sintra*, upon the main *Atlantick*, at the end of high Mountains; which for the pleasure of the Woods here adjacent, as also for the refreshings which come from the Sea, is the usual retirement of the Kings of *Portugal* in the heat of Summer. 6. *Coimbra*, seated on the River *Mondego*, of a pleasant situation, being amongst *Vineyards* and Woods of *Olives*, dignified with an *Episcopal See*, and a famous *University*. 7. *Porto*, seated at the mouth of the *Duero*, now called *Portuport*, a Town of good Trade, and affords an excellent strong Wine. 8. *Bragansa*; 9. *Lamego*; 10. *Guarda*; 11. *Evora*; 11. *Portalegre*; and 13. *Leiria*.

South of *Portugal* is *ALGARVE*, which was united by the Marriage of *Alphonso*, the Third of *Portugal*, who had it in Dowry with his wife *Beatrice*, Daughter to *Alphonso* the Fourth of *Castile*, and Tenth of *Leon*. Its chief places are, 1. *Pharo*, a Port-Town towards the Streights of *Gibraltar* and *Silva*, anciently the Seat of its Kings within Land. The utmost end of this Country, is called the *Cape of St. Vincent*, because the Bones of *St. Vincent*, which the *Christians* kept sacred, were by the *Saracens* (the then Masters of the Country) burnt and scattered about the Earth.

This Kingdom of *Portugal* is much coveted by the King of *Spain*, who esteems it the chiefest *Pearl* of his Cabinet, and as the chiefest *Flower* in his Garland; and which to regain, he hath oft times waged War against them, but to no purpose.

ANDALOUSIA, the most rich and fruitful Country in all *Spain*, and well watered with *Rivers*: It hath on the East and South, *Granada* and the Sea, and adding the Country of *Estremadura*, it reacheth Northwards to the *Castiles*. The chief Places are, *Sevilla*, or *Sevil*, the most beautiful of all this Continent: It is in compass six Miles, and environed with stately Walls, and adorned with no less magnificent Buildings, as *Palaces*, *Churches*, and *Monasteries*. It is severed in two parts by the River *Betis*, which are

C

joyned

Its Commodi-
ties.Extent.
Number of
Parishes.

Its People.

Kingdom of
Andalusia.

joined together by a stately *Bridge*. From this place the *Spaniards* set forth their *West-India Fleet*, and do hither return to unlade; and the Trade of this City is of that greatness that some have dared to say, that the *Customs* are worth to the King of *Spain* the yearly Revenue of about half a Million of *Gold*; and indeed this City, and *Lisbon* in *Portugal*, may be said to be the chief Cities for Trade in this Continent; this for the *West-Indies*, and *Lisbon* for the *East*. It is dignified with a flourishing *University*, and the *See* of an *Archbishop*, whose Revenue is said to be 100000 *Crowns* yearly, and is esteemed the next to him of *Toledo*. In this City are said to be kept 30000 *Genets* for the service of the King of *Spain*, which are ready upon all occasions. And here resteth the body of *Christopher Columbus*, famous for his *Navigations* and *discoveries* of the *New World*. 2. *Cordova*; once the Royal Seat of the *Moorish Kings*; from hence cometh that excellent *Gordovan-Leather*. Not far from this City was fought that famous Battle between *Cesar* and the Sons of *Pompey*, where *Cesar* gained the day, and made an end of the Civil Wars. 3. *Marchena*, famous for its *Genets*. 4. *Medina Sidonia*, whose Duke was General of the *Invincible Armado*, in Anno 1588. 5. *Xeres de la Frontera*, a Sea-port Town, from whence comes our *Sherry Sack*: and 6. *Cadix*, seated in an Isle below *Sevil*, a Colony of the *Carthaginians*.

ESTREMADURA, whis is part of *Andalousia*, hath for its Chief places, 1. *Merida*, built and made a Colony by *Augustus*; and 2. *Guadalcanal*, famous for its Mines of *Silver*.

GRANADA, bounded on the South with the *Mediterranean Sea*: Its Chief places are *Granada*, a stately City, where is yet to be seen the Palace of the *Moorish Kings*, indented with *Mosaical work*, and gilt; its Buildings are of *FreeStone*, fenced about with a strong Wall, on which are 130 *Turrets*. It is an Inland Town, yet famous for being the residence of the *Parliament*, and Court of *Justice* for all the Southern parts of *Spain*, as *Valadolid* is for the North. 2. *Malaga*, a famous Sea-port Town seated on the *Mediterranean*, abounding in *Raisins*, and a rich Wine called *Malaga Sack*. 3. *Almeria*, seated on the *Sea-shoar*.

This Country was the last that the *Moors* were expelled out of, which may be attributed to its barrenness, and being so Mountainous.

MURCIA, bounded on the East with the *Mediterranean Sea*, a fertile Country, and well stored with *Fruits*: Its Chief places are, 1. *Alicant*, seated on the *Mediterranean*, where it enjoyeth a commodious road for *Shipping*, is a place well frequented, enjoyeth a good Trade, and affordeth for *Merchandize* great quantities of excellent *Wines*, and several good *Commodities*. 2. *Cartagena*, seated also on the *Mediterranean Sea*, built by *Ashdrubal* of *Carthage*, at present one of the most famous Havens in *Spain*: and 3. *Murcia*, which takes its name from the Country, a City of good account.

ARRAGON, divided in the midst by the River *Iberus*; the Chief places are, 1. *Caragosa*, or *Saragoz*, seated on the *Iberus* or *Ebro*, anciently called *Cesar Augustus*, by whom it was first founded: It is a famous *University*, and once the Seat of the *Moorish Kings*. 1. *Lerida*, seated on the River *Cinga*, which hath its Spring-head in the *Pyrenean Hills*; it is an *University*. 3. *Huesca*, also an *University*. 4. *Mosons*, which gives entertainment to the King of *Spain* every third year, at which time the People of *Arragon*, *Valencia*, and *Catalonia*, make the King a Present of 600000 *Crowns*; and this is all the *Taxes* or *Moneys* they pay to the King for three years. 5. *Jacca*; 6. *Borio*; 7. *Calajud*; and 8. *Daroca*.

CATA

Country of
Estremadura.Kingdom of
Granada.Kingdom of
Murcia.Kingdom of
Navarre.

CATALONIA, near the *Pyrenean Mountains* on the North; Its chief places are, 1. *Barcelona*, seated on the *Mediterranean Shoar*, a place of good strength and Antiquity, being built out of the ruins of *Rubicata*, an old Colony of the *Africans*, and now dignified with the Seat of the Vicegerent. 2. *Girona*, seated on the River *Batulus*, the ancient Seat of the *Arragon* Princes.

VALENCE, or *VALENCIA*, encompassed with *Murcia*, *Castile*, *Arragon*, and the *Sea*. Its chief places are, 1. *Valencia*, situate near the mouth of the River *Guadalangar*, and about two miles from the *Sea*, where there is an open, but ill commodious road for *Ships*, called *la Greno*; yet, as being the chief City in the Country, enjoyeth a good Trade. Here is an *University* in which *St. Dominic*, the Institutor of the *Dominican Order*, studied: 2. *Morvedre*; 3. *Segobre*; and 4. *Zativa*.

The BALEARE ISLES.

The Islands of the *Baleares*, or Kingdom of *Majorca*, comprehend that of *Majorca* and *Minorca*, both seated in the *Mediterranean Sea*.

MAJORCA, about sixty miles from *Spain*; It is about 300 miles in circuit, and hath for its chief places, *Majorca*, where there is a *University*; and *Palomera*, which gave birth to *Raymundus Lullius*.

MINORCA, distant from *Majorca* nine miles, and is about half the extent of *Majorca*. Its chief place is *Citadelli*, and its chief Port, *Mahon*, which is very large and commodious. These Isles are indifferent fertile in *Corn*, *Wine*, and *Oil*, which are three good *Commodities*.

Nigh to these Isles are two other small ones;

IVISA, or *Ebuisa*, of about 150 miles in circuit, whose chief place is so called, and its Port is *Magno*. The chief Commodity which it affordeth is *Salt*, of which here is made a great quantity. And about ten miles from this Isle is the other, called *PORTMENTERA*, which is about fifty miles in circuit. The People are excellent Swimmers, as well the *Women* as the *Men*.

The Air of the whole Country of *Spain* is generally good and healthful, and the Soil fertile enough, were it well cultivated; but the thinness of its *Inhabitants* since their settling in *America*, is the chief cause thereof.

The whole Country is *Catholick*; It hath 11 *Archbishops*, 56 *Bishops*, 20 or 25000 *Parishes*, and abundance of very rich *Abbeys* and *Monasteries*.

In *Spain* are five great Rivers, viz. the *Douro*; the *Tagus*, or *Tago*; the *Guadiana*; the *Guadalquivir*; and the *Ebro*, or *Iborus*. The *Douro* is esteemed for force, the *Tagus* for its renown, the *Guadalquivir* for its riches, the *Ebro* for its name, and the *Guadiana*, not having wherewith to answer the others (for shame) hides it self under ground.

The chief Hills in *Spain*, are *Seir Morena*, being a chain of Hills, declining from the midst of *Spain* towards the Streights of *Gibraltar*; and upon these Hills it was, that *Cervantes*, the Wit of *Spain*, made the Scene of the many Warlike exploits, achieved by the flower of Knight Errantry, *Don Quixot de la Manche*. 2. *Inbalda*, or *Idubalda*, which extends it self from the *Pyrenia* towards *Portugal*: And 3. *Seira Nevada*, which from East to West crosses *Granada*, and are very high Hills.

C 2

ITALY.

Kingdom of
Catalonia.Kingdom of
Valencia.Island of
Majorca.Isle of
Minorca.

Isle of Ivisa

Isle of Portmentera.

Chief Rivers
in Spain.Chief Hills in
Spain.

LOM-

	Dutchy of Aost, Seignieury of Verceilli,	Aoste, Ivree, Verceilli, Turin, Fossan, Mondevi, or Mondou, Suze, Savillan, Coni, Quierafé, Quiera, Asti.
	Principality of Piedmont,	Saluce, or Saluzzo, Carmagnole, Nizza, or Nice, Barcelonnette.
	County of Aft, Marquisate of Saluce, County of Nice,	Millain, Domo d'Ogila, Como, Novare, Vigevan, Lodi, Pavia, Valence.
	Dutchy of Milan, Val de Ugogne, Lake of Como, Novarese, Vigevanese, Lavegnan, Pavese, Laumelline, Alexandria, Tortonefe, Cremonefe,	Alexandria de la Paille, Tortona, Cremona, Genoa, or Genes, Sarzana, Vintimiglia, Arbengue, Savona, Alba, Aqui, Trin, Cafan, Pignerol, Mafferan, Lugan, Locarno, Bellinzono, Churcoire, Chiavenna, Sondrio, Bormio, Monaco, or Mourgues, Oneglia, Finale, Pontremoli, Montaldo, &c.
	GENES, or GENOA, a Seignieury and Republi; which is divided into	Bergame, Cremate, Bressan, Verona, or Veronese, Vicentin, or Vicentino, Padouan, Polefine de Rovigo,
	The Dutchy of MONFERRAT; as it belongs	Venice, or Venezia, Chioggia, Caorla, Torcello, Muran, Trevigi, Feltin, Bellunio, Cadorin,
	In Piedmont appertaineth	Friouli,
	In the Estate of Milain, apper- taineth	Istria,
	In the Estate of Genes, or Genoa, appertaineth	
	Between Piedmont, Monferrat, &c.	
	The Signieury and Republic of VENICE; where are	
	MANTOUA, to his Dukedom that of Mantoua,	
	MODENE, and REGGE, &c. to their Dukedom,	
	PARMA and PLACENZA, to their Dukedom	
	TRENTE, to his Bishoprick; where are	
	In the Signieury of Venice, ap- pertaineth	
	In the Estate of Mantoua, are to their Lords	
	Between the Estates of Mantoua and Modene, are	
	In the Estate of Modene, and to the Duke of Modene, are	
	In the Estates of Parma, to their par- ticular Princes, are	

LOMBAR-
DY, which
may be di-
vided into
the

Lower, and
comprehend-
eth the E-
states of

	Bergamose, Cremate, Bressan, Veronaise, Vicentin, or Vicentino,	Bergamo, Marinengo, Chuson, Crema, Brescia, Salo, Azola, Orti Nuovi, Verona, Feltina, Legnago, Vicenza, Lonigo, Padova, Este, Montebelluna, Castel Baldo, Montebelluna, Campo St. Pietro, Cittadella, Pieve di Sacco, Rovigo, Adria, Venice, or Venezia, Chioggia, Caorla, Torcello, Grado, Muran, Marano, Mastere, Trevigi, Serravalle, Feltin, Bellunio, Cadorin,
	Padouan, Polefine de Rovigo, Dogado, Coast of Trevifane, Feltin, Bellunio, Cadorin,	Città de Belluno, Pieve di Cadore, Città de Austria, Aquila, Palma la Nova, Città de Friouli, Concordia, and Chiufa, Capo d'Istria, Città Nuova, Porence, Pola, St. Juan de Duino, Nona, Zara, Novigrad, Tina, Sebenico, St. Nicolo, Tavria, Spallato, Salona, Almisa, Strigard, Vesichio, Cataro, Buda, Dolcigno, Torre de Butrinto, Perga, Cherfo, Ostero, Veggia, Arba, Pago, Solta, Nerefo, Lefina, Torta, Iffa, Curzo,
	Friouli,	
	Istria,	
	Dalmatia, or Egiptonia,	
	Epire,	
	Cherfo, Ostero, Veggia, Arba, Pago, Solta, Nerefo, Lefina, Torta, Iffa, Curzo,	
	Corfu, Zephallonia, Zante, Cerigo,	
	Crete, or Candia; now the Grand Seigniors,	
	Teno, Micono,	
	And between the Estates of the VENE- TIANS, are	

The Signie-
ry or Re-
publick of
VENICE;
called the

ESTATE of
FIRM LAND,
which is pos-
sessed

On the Coast of

ESTATE of
or in the
SEA; which
is possessed

In the Gulph
of Venice,

And the Isles

Of the Le-
vant,

To the Pope, or Church, on the Coast of Trevifane,
To the House of Austria, in Friouli and Istria,
To the Signieury of Ragusa, on the Coast of Dalmatia,
To the Turk, on the Coast of Albania, &c.

The

The Estates
of the
CHURCH,
or POPE,
compre-
hendeth

Twelve Pro-
vinces in
ITALY,
of which

Seven are between the TIR-
RHENE and the APEN-
NIN; to wlt, the

Five are between the APEN-
NIN and the GULPH of
VENICE; to wlt, the

In the Kingdom of Naples,
In the Estate of Venice,
Between Piedmont,
Monferrat, and Genes, are

In FRANCE, Between Dauphin, Languedoc, County of Avignon, and of Ve-
and and Provence, the naiscin, where are,

Kingdoms of

Restored, freed,
or quitted from
the Jurisdiction,
or Supremacy of
the Church, or
Poape, divers E-
states; among
which are the

Dukedoms of

County of

Principalities, or Seignories of

Republick of

Campagne de Rome; where are

Patrimony of St. Peter,

Orvietin,

Terre Sabine,

Ombrie, or the Dutchy of Spoleto,

Perusin,

County of

Region, or Quarter of Ancone,

Dutchy of Urbin,

Romague, or Romandia,

Ferrarese,

Bolognese,

The Dutchy, and City of

The City of

Divers places, among which are

Naples,
Sicily,
Sardaigne,
Arragon,
Jerusalem,
Hungary,
England,
Ireland,

Roma, or Rome,
Ostia,
Erasari,
Tivoli,
Palestrina,
Velletri,
Segui,
Anagni,
Ferentino,
Alatri,
Valori,
Terracina.
Veij,
Citta Castellana,
Sutri,
Porto,
Civita vecchia,
Carpeto,
Monte Flascione.
Orvieto,
Aquapendente.
Narni,
Terni,
Spoleto,
Fuligues,
Nocera,
Norcia,
Rieti,
Amelia,
Todi,
Assisio,
Perugia,
Fratti,
Citta di Castello.

Ancona,
Jesi,
Osimo,
Recanati,
St. Maria Lauretane,
Fermo,
Ripa Transone,
Acoli,
Macerata,
Tolentino,
St. Severino,
Camerino, and Fabriano.
Urbino,
Eugubbio,
Cagli,
Sinigaglia,
Fossombrone,
Fano,
Pesaro,
St. Leo,
Durante,
Ravenna,
Rimini,
Sarfina,
Cefena,
Cervia,
Bertinoro,
Forli,

Ragusa,
Mazara,
Mazara,
Mazara,
Mazara,

Bologna,
Bolognese,
Benevento,
Ceneda,
Montaldo,
St. Stefano, &c.

Avignon,
Carpentras,
Cavaillon,
Vaison,
Venasque,
Lisle,
Vaucares,
Pont de Sorgues,
Chauvignac du Pape,
Malausane,

Brantes,
Naples,
Messina,
Cagliari,
Syracuse,
Jerusalem,
Bude,
London,
Dublin,
Parma,
Castro,
Branzano,
Rondiglione,
Radiconani,
Maffran,
St. Marino.

ITALY



A Map of ITALY
The chief Estates & Isles are
the Kingdom of Sicily, the Republic of
Venice, the States of the Church, the
Kingdom of Naples, the Isles of Sicily, Sardinia,
Corsica, &c. In which last parts
are included several other Estates &
provinces of less note.

**THE ROYAL SOCIETY OF THE
LION**
By Robert Roper, Esq.
Kingston upon Hull, Viscount New
Lord Roper, Esq.
Mapp & Humble D.D. by

Scale of Italian Miles, 1000 for
English Miles to a Mile
London, Printed for Richard Blome A 1689.

I T A L Y.

ITALY lies in the midst of the three most Southern parts of Europe. It is formed like a Boot, and washed on all sides by the Sea, viz. by the Adriatick, or Gulph of Venice, behind; by the Tyrrhenian before, and by the Ionian at the foot; only the top of the Boot is contiguous to France and Germany, from which it is parted by the Alps. The extent of the Roman Empire, before Constantine Ruled, and the division thereof, was accounted to be about 3000 Miles in length, to wit, from the River Euphrates Eastward, to the Irish Ocean Westward, and in breadth, from Mount Atlas Southward, to the Danube Northward, about 2000, which large extent was the cause of its ruine and declension.

The Ancient Romans were a gallant People, of a sound Judgment, and a ready Wit, well skilled in Arts and Sciences; very covetous of glory, of great Valour, as by their subduing the chief part of the World, who, contrary to the custom of Invaders, to sack and raine Countries, they taught the People Manners, Literature, &c. The Romans were the first that wore the Purple Robe, and the beginners of Triumphs: they had excellent and stately Theatres; and it was held no disreputation to be an Actor.

This Country is so exceedingly furnished with whatsoever may be found useful for Man, and the Soil so rich and fertile in Grains, Fruits, Rice, &c. in some places having three Harvests in one year, that it is esteemed the Garden of the World. The chief Commodities for Merchandize that this Country yieldeth, are Silks, both raw and wrought into several fabricks, as Satins, Taffeties, Plushes, Velvets, Cloth of Gold and Silver, Damasks, Grograms, Rasbes, Fustians, Glasses, Alom, Armour, excellent Wines, Oils, Saffron, Amseeds, Argal, Brimstone, several Metals, Olives, Almonds, Galls, Kidskins, Lute strings, Quicksilver, Aloes, Gold, Thread, Anchoves, several Drugs, &c.

The Italians are very ingenious, respective, and grave; exceeding malicious, if affronted; much addicted to Women, which are here allowed the liberty to make use of their own. They are generally very jealous of their Wives, so that they are denied the liberty of the Streets, or the common view or society of men. The Women are generally handsome, witty, and of a seeming modest behaviour. It is observed of them, that they are Saints in the Church, Angels in the Streets, Magpies at the Door, Syrens in the Windows, and Goats in the Gardens. Their Language is very eloquent.

Italy may be considered in three principal Parts, viz. Lombardy, Italy, particularly so called; and Naples: to which, for a fourth may be added the neighbouring Isles, in which said parts are divers Estates and Dukedoms; all which are at large set down in the Geographical Tables: and of these parts in order.

Extent of the Roman Empire.

The Ancient Romans.

Its fertility and Commodities.

The People of Italy.

Its chief parts.

L O M B A R D Y.

Parts of
Lombardy.

Lombardy is divided into the Higher and Lower; in the Higher are the Estates of *Piedmont*, which belongs to the Duke of *Savoy*; of *Millan*, which belongs to the *Catholic King*; of the Commonwealth of *Genes*, or *Genoa*; and of *Montferrat*, which belongs to the Duke of *Mantoua*; yet the Duke of *Savoy* hath some part thereof. And in the Lower Lombardy are the Estates of *Venice*, of *Mantoua*, *Parma*, and *Modena*, which have their Dukes; and of *Trent*, which hath its Bishop. And in the one and the other Lombardy, are several small Estates, amongst which is that of *Mirandola*.

Chief places.

The Estates of *PIEDMONT*, washed by the *Mediterranean Sea*, is exceeding fertile, though inferior to other parts of *Lombardy*: It is divided betwixt the Dukes of *Savoy* and *Mantoua*, the River *Tenar* separating their possessions. It is very populous, numbring about 160 walled Cities and Towns, of which the chief is *Turin*, which is the *Palace* and *Count* of the Duke of *Savoy*; it is also dignified with the See of an *Archbishop* and an *University*, where the famous *Erasmus* proceeded Dr. of Divinity. 1. *Aoste*, or *Avost*, seated on the Northern limits of the Country. 2. *Verceiti*, a Town of great strength, bordering on *Millan*, to which it did once belong. 3. *Saluzzo*, a Marquisate and Bishops See. 4. *Nizza*, or *Nice*, a Sea-port Town, and serveth for *Turin*: and 6. *Asti*.

And since we have before omitted it, before we pass further let us repass the *Alpes*, and speak of the Territories of this Duke on this side, which is the Country of *Savoy*, from whence he bears his Title.

Country of
Savoy.

SAVOY, adjoining to *Piedmont*, is a Country very Mountainous and full of narrow passages, and consequently not very fertile. Its chief City is *Chamberry*, or *Cambrevia*, the residence of the Duke, when he is in these parts, seated in a pleasant Valley, amongst Mountains, which are well stored with beautiful Houses, belonging to the *Gentry* of these parts; and next *Turante*, which commands the passage into *Italy*. Its other places of account, are *Thonon*, *Cluse*, *Beaufort*, *Ogine*, *Montiers*, *Tenne*, *Modane*, &c.

Chief places.

The Dutchy of *MILLAN* is rich in Natures gifts, being seated in the best part of *Lombardy*, affording great plenty of *Grains*, *Wines*, *Oils*, and *Silks*, and is said to have the best *Rice* in the World. It hath for its chief places, 1. *Millan*, which notwithstanding its often spoils, is said to be the greatest City of all *Lombardy*. It is seated in a wide Plain, wherein are no less pleasant than profitable *Meadows* and *Rivers*; it is strongly fortified with a *Wall*, and a spacious and almost impregnable *Castle*, besides its *Fortifications*; it is beautified with many splendid Ornaments, the chief of which are, its *University*; its *Hospital*, liberally endowed, seated in an Isle almost two miles in compass, and capable to give entertainment to about 4000 Sick persons. Its *Schools*, *Nunneries*, and *Churches*, which amount in all to 238; most of which are stately structures, and beautified with curious *Paintings*, *Images of the Saints*, *Se-pulchres*, and several Religious *Antiquities*. The whole City is about seven miles in circuit, is exceeding populous, very rich, and of a great Commerce, affording sundry good Commodities. 2. *Pavia*, seated on the River *Tacinus* honoured with a famous *University*, of note for the Battel, in which *Francis* the first of *France* was taken Prisoner by the Emperour *Charles* the Fifth, who for his ransom was forced to release all his Title and interest to the Kingdom of *Naples*, and this Dutchy of *Millan*. 3. *Cremona*, seated on the banks of the *Poe*, first built in the beginning of the *Punick War*. It is a place of good account, hath a considerable *Trade*, beautified with well built Houses, with the conveniency of curious *Gardens*, and hath large and well ordered Streets.

Streets. It is of most note for its high *Tower* and *Cathedral Church*, where are to be seen many Relicks of *Saints*, and curious *Pictures*. 4. *Como*, seated on a Lake so called, which is about fifty miles in circuit, on which the *Citizens* use to recreate themselves in *Boats*; It is a City of good *Antiquity*; and here it was that both the *Plinys* were born. 5. *Alexandria*, which from a poor *Village* (through the often ruins of *Millan*) is now become a fair, strong, and flourishing Town. 6. *Lodi*; 7. *Tortona*; 8. *Valenza*; and 9. *Nobara*.

State of
Genova.

The State of *GENES*, or *GENOVA*, once very large, but at present possesseth only *Liguria* in the Continent, and the Isle of *Corfica*, of which we shall speak in place more convenient. The People are much addicted to *Tras-fick* and *Usury*, and here the *Women* are allowed the liberty of the *Streets*, as also to accompany or discourse with Men, which is forbidden them in other parts. Its chief places are, 1. *Genoua*, seated on the Sea-shoar, at the foot of high Mountains between two Rivers, built by *Janus*, the first Inhabiter of *Italy*; it is (as also its whole State) governed in form of a Republick. The City for its stately Buildings, makes it to be termed by the *Italians*, *Genoua la Superba*, having beautiful *Palaces*, with delightful *Gardens*; its *Strada Nova* being a spacious, long, and strait Street, on each side imbellished with stately *Palaces*, which for the most part are supported by vast Pillars of *Marble*, not to be parallel'd in the World; amongst which may be reckoned the *Jesuits Colledge*, than which nothing can be more polite. The *Palace* of the Prince *d'Orta*, with its famous *Bird-cage*, deserves a particular mention; nor is its new *Mould* to be forgotten, which hath made the *Port* twice as capacious, and much safer than before. The City is in circuit about eight miles, defended besides its *Walls*, by a strong and fair *Castle*; it is exceeding populous and rich; its Inhabitants being observed to be the greatest *Usurers* and *Money-mongers* in the World, which is a great obstruction to its Trade. 2. *Savona*, of note for the interview between *Ferdinand* of *Spain*, and *Lewis* the 12th of *France*, Anno 1507. 3. *Sarzana*; 4. *Arbengue*; and 5. *Vintimiglia*.

State of
Montferrat.

The Estate or Country of *MONTFERAT* doth in part belong to the Duke of *Mantoua*, and the rest to the Duke of *Savoy*; a Mountainous Country, but of a fertile Soyl. It is encompassed with the *Appennine Hills*, *Millain*, and *Piedmont*: the River *Tenarus* parts the possessions of the Duke of *Mantoua* from that of *Savoy*; its chief places are, 1. *Alba*, where *Pertinax* the Roman Emperour was born; 2. *St. Vas*, built by the first Duke of *Mantoua*; 3. *Casal*; and 4. *Trin*, fair Cities, with some others.

Estates of
Venice.

In the Lower *LOMBARDY* we have placed the Estates of *Venice*, *Mantoua*, *Modena*, *Parma*, *Placenza*, and *Trent*; of which in order. The Estates of the Duke of *VENICE* may be divided into several *Parts* or *Provinces*, as they lye on firm Land and on the Sea, which are taken notice of in the *Geographical Tables of Italy*; the chief of which I shall here only name, as I have occasion to treat of the Cities; 1. *Trevigi*, seated in the Province of *Marche Trevisane*, a City of some account, as commodious for an Inland Trade. 2. *Bressia*, seated in the Province of *Bressan*, esteemed the second City for largeness and beauty in all *Lombardy*; it is more famous in her *Archbishop*, who is Earl, Marquis, and Duke, than in any matter of trade. 3. *Brescello*, in the Province of *Bressan*, famous for the death of *Otho*, the Roman Emperour. 4. *Este*, in the Province of *Padouan*, from whence came the late Dukes of *Ferrara*: 5. *Crema*, in the Province of *Crema*, seated on the River *Serio*, and in a very fertile Soyl; a beautiful and rich City, adorned with stately Edifices; and about two Furlongs from the City, towards the Castle, is a stately Temple, called *Sancta Maria del la Cruce*, a structure of great beauty, and richly adorned with *Pictures*, &c. a place much frequented for Devotion sake: this City may be termed a strong Fortrefs against the *Mil-lanois*, upon which it borders. 6. *Vicenza*, in the Province of *Vicentin*, seated at the bottom of a Hill which commands the City, being well watered with Rivers.

Rivers, which uniting themselves not far distant from the City, form a Navigable River, capable to receive *Vessels* of a considerable burthen, which passing by *Padua* falls into the Sea by *Venice*. It is about four miles in circuit, beautified with stately *Palaces*, *Temples*, and Publick buildings; it is very populous, and inhabited by *Nobility* and *Gentry*, who contrary to the custom of the *Italians*, delight to *Travels*; here is a famous *Theater*, capable to receive five thousand People, whose Stage is so represented by Prospective, that it seems a stately City, being modelled by the famous Architect, *Andreo Paladio*: then its *Piazza*, a spacious and beautiful place. 7. *Kerona*, in the Province of *Veronon*, a fair, large and beautiful City, seated on the *Athesis*, a place of great strength, as well by Nature as Art, and boasteth chiefly of its yet standing *Amphitheater*, capable to receive about 80000 Persons. 8. *Padua*, in the Province of *Paduan*, seated in the midst of a spacious Plain, about 20 miles distant from the Sea; It is a place of good strength, being inclosed with double *Walls* and deep *Ditches*, besides its *Bulwarks* and *Fortifications*; it was built by *Autenor*, Brother to *Prigim* King of *Troy*, whose Tomb is here yet to be seen; to this City do belong seven *Gates*, several *Stone-Bridges*, and five spacious *Piazas*; it is every where beautified with many splendid *Edifices*, as well private as publick; also its *Churches* are no less beautiful and rich, of which the *Dome* or *Cathedral* is chief; its *Hall* of Justice is a spacious and stately structure, near to which are the *Schools* for Learning: but this City is now most famous for its *University* of *Physicians*. 9. *Bergamo*, in *Bergamasse*, adjoining to *Cremase*: 10. *Feltri*, in *Feltrin*, towards the *Bishoprick* of *Trent*; and 11. *Rovigo*, in the *Polesine* of *Rovigo*, far engaged towards the *Estates* of the Church. And these Provinces may properly be comprehended under one part, to wit, *Marche Trevisane*. The chief *Rivers* in this Country are *Addua*, *Athesis*, *Brenta*, and *Olius*.

Estates of
Friuli.

The second part in this Estate of *Venice*, is *FRIOLANI*, encompassed with *Histria*, the *Alpes*, *Trevigiana*, and the *Adriatick Sea*. Its chief places are, 1. *Aquilegia*, seated on the *Natisco*, a place not very well inhabited: 2. *Ciudad de Austria*, built by *Julius Caesar*: 3. *Palma Nova*, the best fortified place in all Italy; and 4. *Tergestum*, or *Treist*, seated nigh the *Sea-shoar*. The chief *Rivers* are *Natisco*, *Risanus*, and *Lizonius*.

The third and last part of this Estate shall be *ISTRIA*, of an unhealthy Air. Its chief places are, 1. *Cabo d'Isiria*; 2. *Polo*; 3. *Cita Nuova*; and 4. *Parenzo*: But to proceed to *Venice*, the principal City of this Republick.

City of Venice.

The City of *VENICE* is seated at the bottom of the *Adriatick Sea*, or *Gulph* of *Venice*, built on 72 *Islands*, being distant from the main Land five miles, and defended from the fury of the Sea by a Bank of sixty miles in length, through which, in seven places there are passages broken for small *Vessels*, save only at *Malamocco*, and the *Castle* of *Leo*, which are strongly fortified; it is about eight miles in circuit, having for the conveniency of the Inhabitants about 4000 *Bridges*, amongst which that of *Rialto* is the chief, built over the *Grand Canal*, which for length, breadth and height, may compare with any in the World; and for the passage of *People* to and fro, here are said to be employed about 10 or 12000 *Gondelos*; all its *Buildings* are fair and beautiful; here are 200 particular places built of *Marble*, adorned with *Columns*, *Statues*, and *Pictures* of great value, erected by the *Senators*, which for their Grandure are fit to lodge and entertain any Prince in *Christendom*, most of which are seated on the *Grand Canal*. Also the Royal and proud Palace of the Duke deserves a particular description, which for its largeness, beauty and riches, as well in its fabrick without, as in its *Pictures* and *Statues* within, exceeds all others: then the *Tribunals* or *Courts* of Justice, the *Senate-house*, or great *Hall*. Its *Arsenal* or *Magazine* of War being about two miles in circuit, encompassed with high *Walls*, and the *Sea* having but one place or Gate for entrance, and only one Channel for *Ships* to pass in and out at; and here is kept

kept always in readines about two hundred *Gallies*, with all things fit for a Voyage or fight; also here are kept a thousand Coats of Plate, garnished with Gold and covered with *Velvet*: but above all, its Church of *St. Mark*, which for its exterior and interior beauty, and richness of its Ornaments, have deservedly made this City famous; and in this Church, according to report, lieth the body of *St. Mark*, the Patron of this City, which was brought hither from *Alexandria*. In this City are seventeen rich *Hospitals*, 56 *Trinities*, 67 *Parish Churches*, 26 *Monasteries* of *Nuns*, 54 *Convents* of *Friars*, 18 *Chappels*, and six *Free-Schools* for the increase of Learning. Its *Piazza*, or broad place of *St. Mark*, adorned with sumptuous *Fabricks*, *Statues*, &c. is a place much frequented by the *Gentry*. This City is the only place where *Possey*, *Warsfare*, and *Merchandize* have embraced one another: the *Gentry* are here held in such esteem, that it is held for the greatest honour they can bestow upon the best deserver, to make him a *Gentleman* of this City, and from them the *Senators* are chosen; and out of them the *Duke*, who in a manner is only titular, not having the Regal power, his Salary which is paid him out of the Common Treasury, is forty thousand *Ducats* yearly.

In this Estate are two *Patriarchs*, and 24 *Bishops*.

The Dukedom of *MANTOUA*, seated Northwards of the *Estates* of *Venice*: Its chief City is so called, a place of good strength, encompassed on the sides with Water about a quarter of a mile broad, and on the other side with a *Wall*; it is seated on a River, which emptieth it self into the *Po*. In this City *Virgil*, that famous *Poet*, was born.

The Dukedom of *MODENA*, formerly joyned to that of *Mantoua*, hath for its chief City, *Modena*, famous for the Battle between *Anthony* and *Augustus*, where *Hirtius* and *Pansa*, the two *Consuls*, were slain, and *Anthony* lost the day. This place is the residence of its *Dukes*, as *Mantoua* is of hers.

The Dukedom of *PARMA* and *PLACENTIA*, Northwards of *Mantoua*, hath for its chief place *Parma*, seated in a fruitful Plain five miles from the *Appennines*. It is about four miles in circuit, adorned with many rich and stately *Structures*, is very populous, and well inhabited by *Gentry*, who are much addicted to Learning and *Arms*: it hath a fair and spacious *Campagna*, which feeds abundance of *Sheep*; and here the Duke hath his *Palace*, which is a place of great delight and state. This Country boasts of its *Parma* or *Cheese*, so much esteemed by some. The chief place of *Placenza* is so called; it is seated on the *Po*, commodious for *Traffick*, and famous for its *Fairs* in *Exchanges* here quarterly kept, which are much resorted unto: it is about five miles in compass; a place of good strength and beauty, being adorned with many fair and rich *Structures* and *Churches*.

The *Bishoprick* of *TRENT*, whose chief City bears its names; it is seated in a Plain, and surrounded with *Mountains* of an excessive height, being always covered with *Snow*, by reason of which it is more fit for *Wines* than *Corn*. The City is not large, but indifferent strong; its *Houses* are fair and stately, its *Streets* large, its *Churches* beautiful and richly adorned, and its Royal *Palace* sumptuous and stately. This City is famous for the general Council there held, for the establishment of the *Roman Catholic Religion*.

I T A L Y, particularly so called.

The second part of *Italy*, according to our method, will contain the *Estates* of the *CHURCH* and *TOSCANE*, which may again be subdivided into others, which are taken notice of in the *Geographical Tables*, of which in order.

Territory of Ferrara.

The Territory of *FERRARESE*, about 160 miles in length, and 50 in breadth, had once Dukes of its own, but now belongs to the *Pope*; its chief place is *Ferrara*, so called from the *Iron-Mines* about it; it is seated on the *Po*, which serves as a Rampire to defend it on the one side, as doth a strong *Wall*, well fortified with a spacious *Mole*, on the other side; it is about five miles in compass, beautifully built, and adorned with superb *Edifices*, and is accounted one of the pleasantest Cities in *Italy*, having in the midst thereof a spacious *Green*, into which doth open about 20 *Streets*, most of which are about half a mile in length, and so even and uniform, that from thence the utmost ends of each may be easily discovered: It is well inhabited, rich, and dignified with an *University*.

Province of Bologna.

The Province of *BOLOGNOIS*, Eastwards of *Modena*, hath for its chief place *Bologna*, once the head of 12 Cities; it is seated on the River *Aposa*, and in a large and fertil Territory for *Corn*, *Wine*, *Fruits*, and *Olives*; it is about five miles in circuit, and begirt with a *Wall*. This City is adorned with many fair and proud Buildings, in which they observe a uniformity, amongst which is the *Pope's Palace* for his retirement, which for grandure and stateliness is fit to give entertainment to any Prince in *Christendom*. It is dignified with the chief *University* of *Italy*, famous for the study of the *Civil Law*; it is proudly built, having spacious *Courts*.

Province of Romandiol.

ROMANDIOLA, or *ROMAGNE*, Eastwards of *Bolognese*, hath for its chief places, 1. *Ravenna*, seated on the *Adriatick*, and once a place of good account, having one of the fairest *Havens* in the World, which is now choaked up. This City was the seat of the Emperor *Honorius*, and his Successors, then of the *Gothish Kings*, and lastly of its *Patriarch*; but now, as its *Haven* is choaked up, so is the Land covered with water, which makes it become useless. 2. *Rimini*, seated on the mouth of the River *Rubicon*. 3. *Cervia*, seated on the *Adriatick Sea*, a place where so great quantity of *Salt* is made, that the *Popes* part is valued yearly at 60000 *Crowns*, and 4. *Faenza*.

Dukedom of Urbin.

The *Dutchy* or *Dukedom* of *URBIN*, not long since fallen to the *Holy Seat*, it lying in the midst of his Territories. Its chief places are, 1. *Urbino*, seated at the bottom of the *Appennine*, formed like a *Miter*: 2. *Belfort*, seated in the Midland: 3. *Fano*, a Sea-port Town to *Urbino*, where the *English* do enjoy many Immunities; and 4. *Pisaro*, a Maritim Town, enjoying a good *Haven*.

Province of Marca Ancona.

The Province of *MARCA ANCONA*, bounded with the *Adriatick*, *Naples*, the *Appennine* and *Romagne*; it takes its name from *Ancona*, its chief City seated on the Hill *Gimmerius*, which likes a Promontory shoots it self into the *Sea*, having the best *Haven* in *Italy*, towards the *Adriatick Sea*, the entrance into which is shut up by two Chains, the better to secure the Port. It is a City of good strength, being encompassed with *Walls* and *Bulwarks*; its *Houses* are fair, and its *Inhabitants* rich. 2. *Loretto*, famous for the Church of the *Virgin Mary*, which, as 'tis said was brought from *Palestine* in the Air by *Angels* for the Sins of the People, and is now a stately Structure, and richly adorned with the Presents dedicated to the *Virgin Mary*, and is much resorted

resorted unto by Pilgrims. 3. *Marcerata*, the Seat of the *Governours* of this Province; and here is a *Colledge* of *Lawyers* for the hearing and determining of causes. 4. *Adria*, which gave name to the adjoining *Sea*: 5. *Alcoli* the Fair: and 6. *Pesmo* the Strong.

The Province or part of *PERUSIN* is Westwards of *Ombria*, its chief place is *Perugia*, where *Augustus* besieged *L. Antonius* the Brother, and *Pul-* the wife of *Anthony* the *Triumvir*, which laid place at the Siege became allubed into him; and high to this City is *Lago de Perugia*, of about thirty miles in circuit, near whose Banks, *Hannibal* slew *Flaminius* 15000 of his *Romans*; here is also *Lacus Vademonius*, where *Dolabella* vanquished such of the *Gauls* as had escaped the Sword of *Camillus*.

Province of Perugia.

The *Dutchy* of *SPOLETO*, anciently called *Ombria*, as situate under the *Appennine Hills*, hath for its chief places, 1. *Spoleto*, of great antiquity, where are yet remaining stately *Aqueducts*, the *Temple* of *Concord*, &c. 2. *Assiso*, famous for little, but being the Birth-place of *St. Francis*. 3. *Fuligne*; 4. *Todi*; 5. *Amelia*; and 6. *Rieti*.

Dutchy of Spolito.

The Land of *SABINE*, Southwards of *Spoleto*, hath for its chief place *Narny*, which is of some Account.

Land of Sabine.

The Province of *ORIETIN*, Westwards of *Spoleto*, hath for its chief places, 1. *Orvieto*, seated on so high a Rock, that it amazes those that look into the adjacent Valleys; and 2. *Aquapendente*.

Province of Orvieto.

The part or Province called *St. PETERS Patrimony*, contains also all *Latum*, or *Campagna di Roma*, and part of *Iuria*; it is washed with the *Tyrrhenian Sea*, and in this part are the Mountains called *Gallicanum*, in which *Hannibal* frighted that noble Captain *Fab. Maximus* with a Stratagem, which was by having 2000 *Oxen*, which carried fire on their *Horns*, by which means he passed over the Mountains. Its chief places are, 1. *Osiria*, seated at the Mouth of the *Tiber*, but its *Haven* is stopped up; it is honoured with the See of a *Bishop*, whose place is to consecrate the *Popes*. 2. *Adrea*, to which the *Romans* fled, after the *Gauls* had taken *Rome*. 3. *Veij*, a City of good antiquity, wealth, and largeness. 4. *Alba*, once the Seat of the *Silvian Kings*, and of good fame and beauty, but suffered much in the Wars by the hand of *Tullus Hostilius*. 5. *Antium*, a place of great delight, to which the *Roman Emperours* used to retire for recreation. 6. *Civita Vecchia*, a Maritim Town, abounding in great plenty of *Alom*. 7. *Viterbo*; 8. *Porto*; 9. *Corneto*; 10. *Veroli*; 11. *Palestrina*; and 12. *Trivoli*, all places of some account; but above all *Rome*, seated in the Territory of *Campagna di Roma*, once the Mistress of the World, famous for her noble *Warriors*, who were so exact in their *Martial Disciplines*, for their *Triumphs* and *Antiquities*, and for being the place where the *Spays* and *Trophies* of all *Europe*, and a great part of *Asia*, were laid up; in brief, it was a place sufficiently memorized by the ancient and renowned *Historians*. This City, when in its pristine splendor, was said to be 50 miles in compass, whose *Walls* were beautified with about 750 *Towers*, and said to contain about 463000 fighting men, that is, free *Citizens*, such as were inrolled, besides *Servants*, *Women*, and *Children*; but this City hath several times felt the jostlings of ill fortune, so that as to its present state it hath not the moiety of its pristine beauty and splendour, scarce containing 11 miles in circuit, being almost Orbicular, in which space there is about one third part wast ground; yet it is a place of great splendor, beautified with many Princely *Palaces*, and sufficiently famous for being the Seat of the *Pope*, which makes it to be exceeding populous, being thought to contain about 200000 *Inhabitants*, besides an exceeding great confluence of *Strangers* which hither come, some for devotion, and others to please their fancies with its *Antiquities* and *Curiosities*; and of the *Inhabitants*, two thirds may be reckoned for *Clergy-men* and *Curtisans*, the later of which

St. Peter's Patrimony.

The City of Rome.

which is esteemed to amount to about 40000, who pay 30000 *Ducats* yearly Tribute to the *Pope*, for which two *Galleys* are maintained and furnished for the service in *Christendom*. This City is seated on the Banks of the *Liber*, upon *Campus Martius*. It is built upon ten Hills, on which are fair Structures, as on the top of the *Vatican Hill*, is seated the proud Palace of the *Popes*, large enough to give entertainment to three *Princes* at one time. It is beautified and enriched with excellent *paintings* and *curiosities*; and here are the Gardens called *Belvedere*, famous for its rare *Plants*, delightful *Walks*, curious *Statues*, &c. and on this Hill is the Church of *St. Peter*, being the most splendid and famous in all *Rome*, being adorned with rich *Paintings*, *Tombs*, &c. with diverse choice *Curiosities*, as the *Spear* that pierced our *Saviour's* side, and the head of *St. Andrew*. In this City are about 300 Churches, *Monasteries* for Nuns, *Religious Houses*, and *Convents*; here are many *Hospitals* for the relief of the Distressed, likewise several gallant *Libraries*, as the *Vatican*, the *Je- suite*, &c. And here the *Pope* liveth in more grandeur than any *Prince* in *Christendom*, and the *Cardinals* have their *Palaces* richly adorned, and dwell in good state.

T O S C A N Y.

The Dukedom of *FLORENCE* containeth the greatest part of *Toscany*, to which doth belong those of *Savase* and *Pisa*, and which I shall include under the Dukedom of *Firenze*. It is separated from *Genoa* by the River *Magno*, and the strong Town of *Savazana*, belonging to the *Genoese*. Its People, even the Duke himself, are generally addicted to *Travelling*, by reason of which it is a Country very rich.

Amongst the Cities in this Territory is *Florence*, seated in a pleasant plain, near the confluence of the Rivers *Arno* and *Chiana*, about six miles in compass, and by reason of being the residence of the Duke, is very populous and rich, where he hath a stately and magnificent Palace, richly adorned, and to make it a perfect place of pleasure, its *Courts* are fair, and its Gardens spacious and delightful; having therein excellent *Pountains*, *Groves*, *Labrynths* and *Walks*, besides a place where all sorts of wild Beasts are kept. Besides this Palace, here are several fair and stately *Edifices*, being a place so extraordinary beautiful, that *Charles* the Arch-Duke used to say, *It was fit to be seen only on Florentine*. Here are 44 *Parish Churches*, about 30 *Monasteries*, 12 *Priorates*, and about 30 *Hospitals*. This City was built by *Julia*, that bloody Dictator, and was made a Colony by the *Triumvirs*; it was razed by the *Lombards*, re-edified by *Charles* the Great, bought its Liberty of *Rodolphus*, and now continues subject to the *Medices*, Dukes of *Florence*. This City enjoys a great Trade, by reason of the Privileges and kind entertainment which they find; all sorts of Merchandize being here landed free from all *Imposts*, *Duties* and *Customs*, an advantage not found in many places. 2. *Pisa*, seated at the entrance of the River *Arno* into the Sea; It was once a very large City, and had great Territories, *Corsica*, *Sardinia*, and *Baleares*, having been under its subjection, being very rich and powerful both by Land and Sea; but the many shocks of Ill-fortune have reduced it within one half of its Ancient limits; yet its many good Buildings shew its ancient splendor. 3. *Sienna*, in *Sanase*, built by *Brennus* the Gaul, an Inland City, seated in a large, pleasant and fertile Territory, adorned with beautiful Buildings both publick and private. 4. *Pistoia*, a City, though small, yet rich and well built, famous for its beginning that bloody faction of the *Neri* and *Bianchi*, as of the *Guelfes* and *Ghibellines*. And 5. *Ligorne*, seated at the mouth of the *Arno*, a fair and beautiful City, being accounted the strongest, and one of the principal Towns of Trade in the *Mediterranean Seas*. This City, not many years past, was purchased by the *Florentines* of the *Genois*, for 20000 *Ducats*; before which it was a place of no great note, nor beauty, being a reception for *Thieves*, *Murderers*, *Pirates*, and all

all sorts of Religions, or rather Irreligious people; but now it is well inhabited and resorted unto by *Merchants*, abounding in several rich Commodities.

The Commonwealth of *LUCQUE*, the Signiory of *PIOMBINE*, the Isle of *ELBE*, and the Principality of *MASSA*, make up the rest of *Toscany*. This last is but small in circuit, but yields abundance of white *Marble*, and is beautified with the Cities of *Massa* and *Carrara*; the last othner the residence of the *Prince*, the former strengthened with a stately Castle; both beautified with excellent *Marble Statues*.

LUCQUE comprehends the Territory and Town of *Lucca*, which is seated on the River *Serchius* in a Plain, about three miles in circuit; a place of good beauty, being replenished with many fair *Edifices* and stately Churches, amongst which that of *St. Martin* is the chief; and the Walls are so adorned with *Trees*, that at a distance it seems a City in a Wood. It is of note for being the meeting place of *Pompey*, *Cesar*, and *Crassus*, all three famous Commanders, where they consulted and joyned into a Confederacy for the enlarging their Possessions, and gaining more honour.

Next the Isle of *ELBE*, seated nigh the shoar, and opposite to the Isle of *Corsica*: Its chief places are, 1. *Cosmopoli*, and 2. *Porto Longone*. And opposite to this Isle on the *Toscane* shoar, is the small Signiory of *PIOMBINE*.

Kingdom of N A P L E S.

The third and last part of *Italy* in general, we have comprehended under the Kingdom of *NAPLES*, which by some have been divided into 6 parts, viz. *Terra di Lavoro*, *Calabria Superior*, and *Inferiour*, *Abruzzo*, *Puglia*, or *Capitanata*, and *Terra di Otranto*. It is enclosed on all parts with the Sea, except towards the Lands of the Church; it is every where very fertile, and by some accounted the richest in all *Italy*, abounding in excellent *Wines*, *Silks*, both raw, and wrought into many Fabricks; in *Oils*, *Saffron*, *Almonds*, *Amiseds*, *Argal*, *Brimstone*, Mines of several *Metals*, &c. It is well water'd with *Rivers* and fresh *Streams*, affords plenty of *Cattel*, *Fowls*, and *Grains*; and is throughout replenished with fair, pleasant, and beautiful Cities and Towns. Its parts are:

1. *TERRA DI LAVORO*, in which part is seated *Naples*, the Metropolitan City in this Kingdom, and one of the fairest of *Europe*, called by the *Italians*, *Napoli la Gentile*, as being inhabited by so many *Nobles* and *Gentlemen*. It is seated on the *Mediterranean* shoar, amongst pleasant Hills and fruitful Fields, a City of great antiquity, being said to be built by *Hercules*; it is about 7 miles in compass, fortified with 4 strong Castles, a strong Wall, with *Towers*, *Ditches*, &c. so that it is in a manner impregnable; it is beautified with many superb Structures and magnificent Churches, *Monasteries*, *Colleges*, *Courts*, and *Palaces* of *Princes* and *Nobles*, adjoining to pleasant and delightful Gardens: its Port and Haven is commodious and good, where are kept store of *Gallies*. This place of late years hath been famous for its strange Rebellion under *Masaniello*, a poor Fisher-man; here is an *Hospital*, endowed with 60000 *Crowns* yearly, for the maintenance of the sick, maimed and impotent People. The second City is *Cujeta*, commodiously seated on the Sea-shoar; a place of good strength. 3. *Porto*, a fair and beautiful City, seated on the Sea-shoar, enjoying a commodious Port. 4. *Capua*, seated on the Banks of the River *Vulturnus*; a place of great antiquity, and once very beautiful. 5. *Nola*, where *Hannibal* received an overthrow by *Marcullus*; and 6. *Euma*, once a fair and beautiful City, but now nothing but a heap of Ruins, high to which is the Lake *Avernus*, much famous amongst the *Poets*, whose unwholsome sulphureous sink to infecteth the Air, that birds flying over it lose their lives; and hereabouts (according to fiction,) the *Poets* descend into *Hell*, and here *Eneas* went down into *Hell* to talk with his Father.

Part of Calabria Superior.

2. **CALABRIA Superior**, hath for its chief places 1. *Tarentum*, built by the *Lacedaemonians*, and is the Birth-place of *Architas* the Philosopher. 2. *Cotrone*, whose Inhabitants were noted for their activity in the *Olympick Games*. 3. *Sybaris*, built and peopled by the *Greeks* after the destruction of *Troy*. 4. *Amyle*, formerly peopled by the *Pythagoreans*: and 5. *Cosenza*, a fair City, being the chief of these parts.

Part of Calabria Inferior.

3. **CALABRIA Inferior**, whose chief parts are, 1. *Pesse*, or *Pessidonia*, where *Roses* grow thrice a year. 2. *Regio Rhezo*, or *Rhegium*, so called, because that here it is thought that *Sicily* was by the Sea broken from *Italy*. 3. *Salernum*, famous for the study of *Physick*: and 4. *Nicotera*, seated on the Sea-shoar.

Part of Abruzzo.

4. **ABRUZZO** hath for its chief places, 1. *Aquila*, seated near the *Apennine*. 2. *Aquina*, the Birth-place of that famous School Divine *Thomas Aquinas*. 3. *Sulmona*, the Birth-place of *Ovid* the famous Poet. 4. *Benevento*, once called *Maleventum*: and 5. *Molise*, which some esteem to be the chief of the County.

Part of Puglia.

5. **PUGLIA**, whose chief places are, 1. *Manfredonia*, dignified with the Seat of an *Archbishop*. 2. *Canna*, famous for the signal Victory gained by *Hannibal* against the *Roman Consuls* and the *Romans*, of whom were slain about 42700. 3. *Barletta*, a strong Fortress. 4. *Venusia*, the Birth-place of *Horace*. 5. *Arpinum*, the Birth-place of *Tully*: and 6. *Mont St. Angelo*, a fair City, not far from *Manfredonia*.

Part of Terra di Otranto.

6. **TERRA DI OTRANTO** hath for its chief places, 1. *Otranto*, the taking of which by *Mahomet* the Great, put all *Italy* into such a fright, that *Rome* was almost left without *Inhabitants*, and was not fully inhabited until the expulsion of the *Turks* the next year. 2. *Brundisium*, boasting in its Haven, which is esteemed not inferior to any in *Christendom*. 3. *Gallipoli*, a place of some Traffick, affording abundance of *Oyls* and *Cattle*. 4. *Leccia*; 5. *Tarantum*; and 6. *Brindisi*; all places of good account.

In this Kingdom are 20 *Archbishops*, 127 *Bishops*, 13 *Princes*, 24 *Dukes*, 25 *Marquesses*, and 90 *Earls*. But let us proceed to the *Italian Isles*, and first with *Sicily*.

The ITALIAN ISLES.

S I C I L Y.

Island of Sicily.

The Island of **SICILY** is the greatest neighbouring Isle to *Italy*, from which it is divided by a small Channel running between *Messina* and *Regio*, now called the *Phare of Messina*, and higher in this passage were the *Scylla* and *Charybdis* of the Ancients. This Isle was once called *Trinacria*, from its being triangular, and abating 3 *Promontories* at each corner into the Sea, to wit, *Cape de Faro*, regarding *Italy*; *Cape Passaro*, regarding *Morea*; and *Cape Boj*, or *Cape Coco*, facing the *Promontory Mercurio*, of *Africa*. This Isle is termed the Queen of the *Mediterranean Isles*, not only for its greatness, being in compass about 700 miles; but for her other excellencies and admirable fertility, yielding all things necessary for the use of man; it chiefly abounds in *Wines*, *Oyls*, *Sugars*, *Honey*, *Wax*, *Salt*, *Saffron*, *Minerals*, *Alom*, *Agats*, *Corals*, *Emeralds*, and *Silk* in great plenty, both raw and wrought, and such abundance of all sorts of *Grains*, that it was called the *Granary* of the *Roman Empire*, and is now found to furnish *Malta*, the adjacent Isles, *Spain*, and some part of *Italy* with her superfluities. Here are many *Baths* of different natures, which are found good for several Infirmities. The chief Hills in this Isle are *Mount Hybla*, famous for its *Bees* and *Honey*, and *Mount Aetna*, for its sending forth flames of fire, which in the year 1669 made such an eruption, that it destroyed divers

divers Towns; and for its height, whose top is exalted ten miles above its Basis, and is a good Land-mark to *Saylers*. This Island was first inhabited by a race of huge *Giants*, much spoken of by *Homer*, who called them the *Le-frigones*; and the *Cyclopes* of which last was *Polyphemus*, so famous for the entertainment of *Ulysses* and his Fellows. This Isle is divided into 3 *Provinces* or *Valleys*.

1. **VALLI DI ENOTO**, which is the South-east part, hath for its chief places, 1. *Siracusa*, once the Metropolis of the whole Isle, strongly fenced about with a *Wall*, and other *Fortifications*, being a Garrison of *Spaniards*. Its Buildings are fair, and shew something of its Antiquity; it hath two Harbours, one towards the South, and the other towards the North sides of the City. 2. *Leontium*, seated Northwards of *Siracusa*, with which it had divers times struglings for Priority. And 3. *Enna*, a Midland Town or City.

Its Parts and chief Places.

2. **VALLI DE MAZORA** containeth all the West part of the Isle; its chief places are, 1. *Moreau*, or *Montreuil*, famous for its *Archbishops See* and *Cathedral*. 2. *Girgenti*, the Seat of the Tyrant *Phalaris*, who afflicted *Phalaris* in the *Brass Bull*: and 3. *Palermo*, once a Colony of the *Phoenicians*, and now the chief City in the Isle, being the Seat of the *Spanish Viceroy*. It is beautified with magnificent *Palaces* and *Temples*, curious Buildings, and fair Streets, famous for being the Birth-place of so many brave Men, as was *Siracusa*.

3. **VALLI DE DEMONA**, possessing the North-east part of the Isle, and boasteth of its chief Town *Messina*, seated opposite to *Rhegium* in *Naples*, a place of great strength, as well by Nature as Art, having before it the Sea, where they have a no less famous and commodious, than a strong Haven, and behind it are high Hills. It is the See of an *Archbishop*, beautified with fair and stately *Edifices*; and here the *Vice-Roy* hath a magnificent Palace adjoining to the *Arsenal*, where their *Gallies*, &c. are kept; and here *Venus*, *Neptune*, *Castor*, and *Pollux* had their Temples, from whose ruins are now erected *Christian Churches*. The *Gentry* and *Citizens* here live in great delight and pleasure; this City is the chiefest place of Traffick in the Isle, being very well frequented by Merchants and Strangers. Its other places are *Malafa*, seated on the North Promontory; then *Enna*, where *Venus* was worshipped; next *Catania*, where there is a Colledge for the studying the *Sciences*, but chiefly for the *Civil* and *Canon Law*; and lastly *Nicosia*, a Midland Town.

S A R D I N I A.

The Island of **SARDINIA**, or **SARDAGNE**, is seated not far from *Sicily*; it is in length about 150 miles, and 90 in breadth; not so fertile as *Sicily*, yet it abounds in *Corn* and *Cattle*, but is deficient in *Oil*, and other Commodities. It is now subject to the *Spaniard*, and is divided into two parts, viz. *Cape Logodori*, and *Cape Gagliari*; Its chief places are, 1. *Cagliari*, seated opposite to *Africa*, having a commodious Haven, which makes it to be well frequented by Merchants. The City is adorned with goodly Buildings, fair Temples, and magnificent *Turrets*, being the Seat of the *Spanish Vice-Roy*, as also the See of an *Archbishop*. 2. *Bosa*, likewise the See of an *Archbishop*. 3. *Oristagni*, and 4. *Sassary*, both places of good account.

Its People are of a mean Stature, are very great Hunters, great Pains-takers, no lovers of the *Spaniards*, not much addicted to Learning, and in matters of Religion not over strict.

Isle of Sardinia.

C O R S I C A.

Isle of Corsica.

The *Ile of CORSIKA*, seated in the *Ligurian Sea*, opposite to *Genoa*, is about 100 miles in length, and 50 in breadth; the Soil, by reason of the Mountains, is not very fertile in *Grain*, but aboundeth in excellent *Wines*; it yieldeth likewise *Oils*, *Figs*, *Raisins*, *Hony*, *Wax*, *Alom*, *Box-wood*, and *Iron-Mines*; its *Dogs* and *Horses* are esteemed excellent. The chief places are, 1. *Bastia*, seated on the North-east part; hath a commodious Haven, and strong Garrison, dignified with the residence of the *Genouese* Governour, under whose command the Island is. 2. *Marianna*; 3. *Calvi*; 4. *Porto-Vecchio*; 5. *Adiazzo*; and 6. *Bonifacio*. The People are for the most part poor, headstrong, churlish, and not addicted to Literature.

The Vulcanian Isles.

Besides this *Island* there are abundance of others; though of no great account, and far lesser; as the *VULCANIAN Isles*, lying on the Coast of *Sicily*, being 11 in number; the chief of which is *Lipara*, from whence the rest take their names, being about 10 miles in circuit; then *Stramboli* and *Vulcania* send forth a constant Smoak.

Isles of Naples.

The *Isles of NAPLES* are 18 in number, the chief of which are *Ischia*, *Caprea*, the retirement of *Tyberius*; and *Aenaria*.

Ligurian Isles.

The chief of the *LIGURIAN Isles* is *Elba*, famous for its two Ports *Porto Ferraro*; and *Porto Longone*; Its chief places are, 1. *Cosmopolis*, built by *Cosmo di Medices*; 2. *Gallinaria*; 3. *Giglio*; and 4. *Monte Christo*, which is but a Rock.

Other Estates.

There are yet in *Lombardy* many little Estates, as of *Mirandola*, *Guastella*, *Sabionetta*, &c. about *Mantoua*, of *Pallaviano*, and *Landa*, &c. amongst the Estates of *Parma* and *Placenza*, of *Manaco*; on the Coast of *Genoa*, of *Masseran* in *Piedmont*. The Count of *Pitiglian*, and the Marquess of *Malispine* in *Toscany*; all which Princes, though holding from under the protection of others, have Sovereign Rights.

Italy, with its *Isles*, extends it self from about the 36th degree of Latitude unto the 46th, which are 250 Leagues from South to North, and from the 36th degree of Longitude to near the 48th, which are as much or little more from West to East; but its form scarce fills the third part of what is contained in these degrees.

In *Italy*, I make little Account of other *Rivers*, than that of the *Arno*, *Tiber*, and *Po*; the two first descend from the *Appennine*, the last from the *Alpes*.

T U R K E Y

ESCLAVONIA, which is possessed by the Turk, Hungarians, and Venetians, and may be divided into

HUNGARIA, with its chief Cities, belonging to the Grand Signior, as

ESCLAVONIA, with its Parts and chief Places, as they belong to the Turks and Venetians, Croatia, Esclavia, Dalmatia, Turks, Venetians, Turkish, Venetians,

DACIA, (now belonging to the Turks) with its Provinces of, Transylvania, Bosnia, Servia, Bulgaria, Moldavia, Bessarabia, Walachia, Hermentiad, Saraih, Baglialuch, Jaycza, Belgrad, Sophia, Zuccania, Lasy, Khermen, Targovisko, Constantinople, Andrinople, Gallipoli, Caridia, Abdera, Pera, and Galata, Heraclea, Pella, Salonichi, Stagir, Durazzo, Valona, Croja, and Siatari, Annia, Larissa, Preveza, Larra, Athens, now Sitnes, Thebes, now Slives, Lepanto, Corinte, Mistra, Modon, Petras, and Coron, Negroponte, Caristo, Lemnos, Milo, Tira, Tirelio, Nio, Stagnia, Morgo, Nicia, Levira, Zinara, Radia, Siphano, Micone, Teno, Helena, Engia, Fermentia, Zen, Andri, Coos, Delos, Samos, Talo, Pelagmissi, Sciro, Candia, Canea, Suda, Zante, Zefalonia, Augustali, Corfu, Cerigo, Santa Maura, Strivalis, Val de Campara, Zard, Veges, Leina, Cherfo, Curzolo, and Griffa.

TURKEY in EUROPE; or that which the Grand Signior possesseth in whole (or in part) in EUROPE; may be comprehended under

GREECE, as it is possessed by (or under the subjection of) the Grand Signior; which may be divided into the Provinces, or Parts of

MACEDONIA, with its parts of, Jamboli, Camenolitaria, Migdonia,

ALBANIA,

THESSALY, now by the Turks called JANNA,

EPIRE, now by the Turks called CANINA,

ACHAIA, and ETOLIA, now called LIVADIA,

PELOPONNESUS, now called the MOREA,

Negroponte, Stalimene, of Old, Lemnos,

THE ISLES called the SPORADES, and CYCLADES; which are the Isles of

AEGEAN SEA, are

Samothracia, Talo, Pelagmissi, Sciro, Creba, or Candia,

Zante, Zefalonia, Corfu, Cerigo, Santa Maura, Strivalis, Val de Campara,

IONIAN SEA, are the Isles of

ADRIATICK SEA, or GULPH of VENICE, are the Isles of (if any are so called,)

The Em-
pire of the
GRAND
SIGNIOR,
or GREAT
TURK,
holdeth

In EUROPE,
and

Towards the higher ESCLA-
VONIA,

Towards the lower ESCLA-
VONIA,

On the BLACK SEA,

In GREECE, which by the
Turks is called ROMELI,
the Parts or Provinces of

Hungaria, in part,
Eſclavonia, in part,
Croatia, in part,
Dalmatia, in part,

Bosnia,
Servia,
Bulgaria,
Podolia, in part,
towards Moldavia,

Romania,

Macedonia,

Albania,

Thessaly,

Epiro,

Achala, and Etolia,

Peloponnesus, or the Morea,

And divers Isles; the chief of
which are

Buda,
Gyula,
Pefega,
Whitz,
Narenca,
Moſtar,
Jayca,
Bagnialuch,
Belgrade,
Sophia,
Ozaczow,
Azac, or Azoff,
Conſtantinople,
Adrinopolis,
Gallipoli,
Salonica,
Heraclay,
Sourani,
Durazzo,
Viloha,
Armiro,
Preveza,
Larta,
Athens, or Setines,
Thebes, or Stives,
Lepanto,
Corinthe,
Mifitra, or Lacedemone,
Petras,
Negroponte,
Stalimene,
Santa Maure, &c.
Smyrna,
Ephesus,
Burſa,
Chioutaigt,
Angora,
Cogni,
Trebifonde, &c.
Rhodes,
Nicofia,
Samogouſta,
Metellin,
Scio,
Samos,
Patmos,
Aleppo,
Tripoli,
Sayd, or Sidon,
Damaſcus,
Jeruſalem,
Naplouſe,
Gaza,
Caramit,
Aſanchif,
Bagdad,
Baſſora,
Moſul,
Chiahnezuil,
Stranu,
Corti,
Teffis,
Derbent,
Arach,
Ana,
Zibid,
Aden,
Telenſin,
Sargel,
Tenec,
Algier,
Bugia,
Steſſa,
Conſtantina,
Bonna, and Tebeſſa,
Miferra,
Gouletta,
Souſa,
Media, or Africa,
Tunis,
Cairoan,
Begue, and Urbs,
Tripoli,
Lepeda,
Corena,
Alberton,
Alexandria,
Roſetta,
Damietta,
Cairo,
Sayd, or Thebes,
Suaquen,
Arquico, or Ercocco,
Sues,
Raguſe,
Hermanſtat,
Tergovis,
Saczou,
Caſſa.

ANATOLIA, wherein are divers Cities, among which are

Divers Isles, the chief among
which are

Rhodes,
Cypre, or Cyprus,
Metelin,
Scio,
Samos,
Patmos, or Patmos,
Souric, or Syrie,

SOURIA; which is divided in

Phenicie,

Judea, or the Holy Land,

ASSYRIA, which is divided
in

Mefopotamia, or Diarbeck,
Chaldea,
Aſſyria, in part,
Georgia, in part,

THRCOMANIA, and

Turcomania,

ARABIA, in part, to wit, in
the

Stony,
Defart,
Happic,
Telenſin,

The Kingdom of ALGER; where are four Parts or King-
doms, to wit,

Algier,
Bugia,
Conſtantina,

The Kingdom of TUNIS, with
its eight Government; to wit,

Four Maritime,
Four Inland,

In AFRICA,

The Kingdom of TRIPOLI,
with its parts of

Tripoli,
Defart of Barca,

EGYPT, with its three Parts;
to wit,

Errif,
Bechrio, or Deſceſer,
Sayd,
Coaſt of Abex, in part,
Between Egypt and Arabia,

Nigh unto EGYPT,

In EUROPE,
reſtored from
this Empire,

The Signiory, and Republick of
The Vayvodes, or Princes of
And the Cham of the

Tranſilvania,
Valaquia,
Moldavia,
Petit Tartaria,

TURKEY



A MAP of the ESTATES of the TURKISH EMPIRE in ASIA, and EUROPE
Signed by Monr Sanfon Geographer to the French King

Turkey in Europe.

THE Estate or Empire of the *Sultan*, or the *Ottomans*, whom we call the *Grand SIGNIOR*, or *Great TURK*, is part in *Europe*, part in *Asia*, and part in *Africa*; the greatest part is in *Asia*, and the least in *Europe*; and yet this is not the least considerable, since the *Grand Signior* makes here his residence, and hath from hence his best Forces. That which he holds in *Europe* extends itself from the 35th degree of *Latitude* to the 45th, and sometimes near the 47th, which are 250 or 300 *French Leagues*; and from the 40th of *Longitude* unto, or beyond the 56th, which are likewise 300 *Leagues*.

This part of the Estate of the *Turks*, which we call *TURKET* in *EUROPE*, may be divided into two principal Regions, viz. *Sclavonia*, or *Esclavonia*, and *Greece*. *ESCLAVONIA*, which shall be along the *Danube* from *Germany* unto the *Black Sea*, and is bounded on one side with the *Danube*, and on the other with the *Mountain Marinai*: and under the name of *Esclavonia* may be understood *Hungaria*, especially so much as the *Turk* is Master of; the particular *Esclavonia*, with the Provinces of *Croacia*, *Esclavia* and *Dalmatia*, of which parts the *Grand Signior* holds but one part; then the Kingdom of *Dacia*. The other Region, which I call *GRECE*, shall reach from the *Mountain Marinai*, a great way into the *Mediterranean Sea*, and advancing towards the South, in which are several *Provinces*, which we shall treat of.

Division of:
Turkey.

HUNGARIA

The Kingdom of *HUNGARIA* taken entirely, is bounded on the East with *Transylvania* and *Walachia*, on the South with *Sclavonia*, on the West with *Austria*, and on the North with *Poland*. It is in part possessed by the *Christians*, and in part by the *Turks*.

Kingdom of
Hungaria de-
scribed.

This Kingdom is of an exceeding fertile Soyl, yielding *Corn* thrice a year, and feeding such abundance of *Cattle*, that it supplies *Germany*, *Sclavonia*, and other adjacent parts, with about 100000 *Oxen* yearly; they have *Deer*, *Pul-
lain*, *Pheasants*, *Partridges*, and all sorts of *Fowl* in such plenty, that they are free for any one that will take them; and their Rivers are found to afford ex-
cellent *Fish*. It also aboundeth in several good *Commodities*, as *Hides*, *But-
ter*, *Cheese*, *Copper*, *Hony*, *Wax*, *Fish*, &c.

Its fertility.

Its Commodi-
ties.

Its Inhabi-
tants.

The People are of a rude behaviour, not addicting themselves to *Literature*, nor *Mechanical Trades*. They use the *Scythian Language*; they are well proportionate, strong, and very valiant. The *Females* are denied the Estates of their Parents, neither have they any thing in *Marriage*; and until Men and Women are married, they are not allowed the use of Beds to lye upon.

Its division.

This Kingdom now stands divided between the *Grand Signior* and the *Hungarians*. The *Turks* have here four *Beglerbys*, to wit, of *Buda*, of *Gan-
nisa*, of *Agrica*, and of *Temiswar*; the chief Cities which they possess, are *Buda*, seated on the *Danube*, once the Metropolis of the Kingdom, and *Roya*
Seat

Seat of the Kings of *Hungaria*; it was taken by *Solyman* in 1536. Next *Gyula*, a strong Town on the Confines of *Transylvania*, which was betrayed by the Governour to *Solyman* in hopes of a great Reward, which proved unsuccessful unto him to the loss of his life: then *Alba Regalis*, which by the *Germans* is called *Wienburg*; also *Quinque Ecclesie*, taken in the same year with *Alba Regalis*: And these are the strong places, and of good account with them. The chief places in the *Emperours* or *Hungarians* possessions, are *Presburg*, seated on the edge of *Austria*, and since the *Turks* became Masters of *Buda*, this hath been the Metropolis of *Hungaria*: next, *Strigontum*, or *Gran*, once taken by the *Turks*, but regained; also *Zegith*, taken by *Solyman* the Magnificent in Anno 1566, who there ended his days: then *Newhaufel*, which hath several times withstood the fury of the *Turks*. The other Towns in the *Hungarians* possession, were (if not are) *Komara*, in the Isle of *Schut*; then *Bars*, *Novigrad*, *Vizzehrad*, *Papa*, *Sarwar*, and *Owar*.

The chief Order of Knighthood in this Kingdom, is that of the *Dragon*, instituted by *Sigismund* King of *Hungaria*, and *Emperour*.

E S C L A V O N I A.

Bounds of
Esclavonia.

ESCLAVONIA hath for its Eastern bounds the River *Drinus*, and a line drawn thence to the Sea; for its Southern bounds the *Adriatick Sea*; for its Western, part of *Italy*; and for its Northern, *Hungaria*. The whole length of this Country is about 480 miles, and its breadth about 120; its situation under the 6th and 7th *Climats*, the longest day making 15 hours and a half. This Country is divided into the Provinces of *Croacia*, *Dalmatia*, and the particular *Esclavonia*, and are partly possessed by the *Venetians*, and partly by the *Turks*.

Its division.

Its fertility.

The Country is observed to be more fit for grazing and feeding of *Cattle*, than for *Tillage*, for the *Sheep* and other *Cattle* bring forth their young twice a year, and their *Sheep* are shorn four times a year; likewise their chief Commodities are *Horses*, for Service; *Cattle*, which yields them abundance of *Hides*, *Tallow*, *Butter*, *Cheese*, and *Wool*, of which they make *Cloth*. Here are also some Mines of *Gold* and *Silver*, which are in the *Turks* possession.

In *Esclavonia*, the chief places in the *Turks* possession are *Posega*, a place of good account, and *Barra*: and in the *Venetians* possession is *Copranitz*, a fair, strong, and good City.

Province of
Croacia.

The Province of *CROACIA* is in a manner wholly possessed by the *Venetians*, the *Turks* only possessing the strong Town of *Whitz*: the chief places possessed by the *Venetians*, are 1. *Sissej*, or *Sissaken*, famous for its resisting the *Turks* in 1592, a fair and strong City. 2. *Gardiskia*, seated on the *Savus*. 3. *Novigrod*, also seated on the *Savus*: and 4. *Bruman*.

Province of
Dalmatia.

The Province of *DALMATIA*, whose Southern parts are washed with the *Adriatick Sea*, is divided betwixt the *Venetians*, who hold the greatest part, and the *Turks*; whose chief places are, 1. *Marenza*, seated on the Sea-shoar; 2. *Moflar*, an Inland Town towards *Bosnia*; 3. *Stagno*, and 4. *Sibioncello*, both Maritim Towns; and nigh unto which is the Isle of *MELEDA*, which also belongs to the *Grand Signior*. The chief Towns in the possession of the *Venetians*, are 1. *Rbagusa*, seated on the *Adriatick Sea*, a City of great Traffick and Riches, being a Commonwealth of it self. 2. *Spalato*, a Maritim Town on the *Adriatick*, and in a most pleasant Valley on the South side of great Mountains; and in the *Wall* towards the Sea, is to be seen a great remainder of a *Gallery* in *Dioclesians Palace*. This Town is kept by the *Venetians* as their only *Emporium*, plyed successively with two *Gallies*, which carry between this place and *Venice* such Merchandize as are Transported into *Turkey*, or from thence brought in. 3. *Zara*, a strong Fortrefs, seated on the

the *Adriatick* within the Gulph, which, by reason of its commodious situation, is most apt to command the whole *Adriatick*, and is strongly fortified and well Mann'd. In this City is a Temple of *St. John di Malvaria*, which was built by a company of *Sea-men*, who being in a great and dangerous Tempest, made a Vow, that if they escaped they would consecrate a Temple to the said *St. John*; and being saved, they Landed here, and performed their Vows. 4. *Sebenico*, seated on the Sea-shoar, having large Territories. 5. *Nona*; and 6. *Traw*.

D A C I A.

The Kingdom of *DACIA* is bounded on the East with the *Euxine Seas*, on the West with *Hungaria*, and on the North with the *Carpathian Mountains*. The Country throughout is very fertile, affording for Merchandize, *Oxen*, *Butter*, *Cheese*, *Tallow*, *Hides*, *Hony*, *Wax*, and excellent Warlike *Horses*, whose Manes are said to hang down to their feet; their Fruits are good, and in great plenty, and the Earth is enriched with Mines of several Metals. It is seated in the Northern Temperate Zone, between the 7th and 10th *Climates*, which makes the longest day to be 17 hours.

Its Bounds.

Commodities.

The People are well made and proportionate; they are head-strong, resolute in their Opinions, and of no ready wit; they use the *Slavonian Language*, they are *Christians*, and follow the *Greek Church*.

The People.

The Kingdom at present is divided into several Provinces, as in the *Geographical Table of Turkey in Europe*, is set down; all which are subject to the *Grand Signior*.

The Province of *TRANSILVANIA* hath for its chief places, 1. *Wahin*, far engaged towards the West, and it is a frontier Town to *Hungaria*, and of some account and strength. 2. *Hermus*, more towards *Moldavia*. 3. *Wienburg*; 4. *Burgos*; 5. and *Hanyad*.

Province of
Transylvania.

The Province of *BOSNIA* hath for its chief places, 1. *Sarab*, the Metropolitan City, seated in a fruitful Valley, which on the North and South sides are impured with ridges of pleasant Hills, of an easie ascent. This City is said to contain about 80 *Moschees*, and about 20000 *Houses*, which for the most part are but meanly built. 2. *Bagnaluch*, once the residence of the *Bosnian Kings*; and 3. *Yayza*, the usual Sepulchre of those Kings.

Province of
Bosnia.

The Province of *SERVA* whose chief Cities are, 1. *Belgrade*, once the Seat of *Christendom*, valiantly resisting the power of *Amurath* the 6th, and *Whitomer* the Great, but yielded to *Solyman* Anno 1420, when this whole Country became a *Turkish Province*. 2. *Stoniquart*, once the Seat of *Despot*; and 3. *Samandria*.

Province of
Servia.

The Province of *BULGARIA* hath for its chief places, 1. *Sofia*, the Seat of the *Blesherber* of *Greece*, under whom are 21 *Sangiacs*, seated almost in the midst of a long and fruitful Valley, beautified with many fair *Hays* and *Babys*, the chief of which hath not *Bouquins*. Its College is magnificent, and its *Moschees* are many and beautiful, especially that in the midst of the City, which is the largest, and here the doors of the houses of the *Christians* and *Turks* are not above 3 foot high, which is to made to keep out the *Turkish Horses*, who would else in their Travels make them serve instead of *Stalles*. So great is the Trade, that they lie under 2. *Orisco*; 3. *Nova*; 4. *Durostoro*; and 5. *Delfor*, all which are seated on the *Danube*. 6. *Proslavia*, seated at the mouth of one of the branches of the *Danube* at its fall into the *Euxine Sea*. 7. *Calitza*; and 8. *Varna*, both seated on the *Euxine* or *Black Sea*.

Province of
Bulgaria.

The Province of *MOLDAVIA*, whose chief places are, 1. *Zuccania*, once the Seat of the *Varvod*. 2. *Sotzowa*; and 3. *Lazy*, both good Cities.

Province of
Moldavia.

Country of
Bessarabia.

To the Province of *Moldavia* doth belong the small Country of *BESSARABIA*, which lieth between *Podolia* and *Bulgaria*; and is commodiously seated on the *Black Sea*. Its chief places are *Kberman*, or *Moncastro*, the Seat of the *Turkish Sargiack*, seated on the River *Tyras*, not far from its influx into the Sea; and 2. *Kilia*, also seated on the *Euxine Sea*.

Province of
Walachia.

The Province of *WALACHIA*, being divided from *Bulgaria* by the *Danube*, and is esteemed the richest Province in all *Dacia*. Its chief places are, 1. *Targovisco*, the Seat of the *Vajnuds*; 2. *Domboviza*; and 3. *Brailonum*.

G R E E C E.

The Parts of
Greece.

The rest of *Turkey in Europe* may be comprehended under the name of *GREECE*, which is divided into several parts, to wit, *Romania*, which answers to the ancient *Thrace*; *Macedonia*, whose divers parts have received divers names, as that of *Jamboli*, of *Camenolitaria*, of *Megdonia*, or particular *Macedonia*, *Albania*, and *Thessaly*, which is now called *Jumna*; *Epirus*, now *Canina*; *Achaia* and *Aetolia*, now *Livadia*; and *Peloponnesus*, now the *Morea*.

Its Bounds.

GREECE, esteemed the Mother of *Arts* and *Sciences*, hath for its Eastern bounds the *Egean Sea*, the *Hellepont*, *Propontis*, and *Thracian Bosphorus*; and for its Western, the *Adriatick Sea* and *Italy*. It is seated in the *Northern Temperate Zone* under the 5th and 6th *Climates*, the longest day being 15 hours.

Its fertility,
and Commodities.

The Soil without doubt, is very rich and fruitful, and would be very profitable to the *Husbandman* if pains were taken in tilling it; but the *Great Turk* seizing on their Estates, when and as often as he pleaseth, makes them careless to cultivate it; yet here are found several good *Commodities*, which are transported to other places, as *Wines*, *Oils*, *Silk*, both raw, and wrought into several *Manufactures*, as *Velvets*, *Damasks*, &c. also *Grogams*, *Brimstone*, *Copper*, *Vitriol*, *Cottons*, *Sops*, *Carpet*, *Cute*, *Curranis*, *Cuminseed*, *Aniseed*, &c.

The Ancient
and present
Greeks.

The *Greeks*, though a scattered People, since the *Turks* became Masters of their Country, yet still retain their *Name*, *Religion*, *Customs*, and *Language*; as indeed they do in all other places where they live. They were once a Nation so excellent, that their Precepts and Examples do yet remain, as approved *Canons* to direct the mind to *Virtue*; they were Lovers of freedom, every way noble, in matters of *Government* famous in *Arms* glorious, in *Arts* admirable, and to whom the rest of the World were held *Barbarians*; but since they became under the *Turkish* yoke (for the generality) their Spirits are so low, that their knowledge is turned into ignorance, their liberty into contented slavery, their *Virtues* into *Vices*, and their industry in *Arts* and *Sciences* into idleness. They are much addicted to drink and dancing, for which they had the Name of *Merry Greeks*; they are of a good proportion, and of a swarthy complexion; their Women are well favoured, brown, and excessively amorous, in matters of *Habit* they differ little from those amongst whom they live. The *Christian Faith* was here established by *Timothy*, to whom *St. Paul* wrote two *Epistles*. The Fathers which this Church most adhereth unto are *Chrysostom*, *Basil*, and the two *Gregories*; and the Church is governed by *Patriarchs*, one of *Constantinople*, another of *Alexandria*, another of *Jerusalem*, and another of *Antioch*, freely exercising their Religion, which differeth much from the Church of *Rome*, as I shall in place elsewhere take notice of, and have every where their *Temples* and *Monasteries*. If a *Patriarch* die, another is elected by the *Synod* of *Bishops*.

Famous Men
here bred.

This Country hath bred several famous Men, as *Alexander* the Subverter of the *Persian Monarchy*, *Xenophon*, *Plutarch*, *Herodotus*, and *Thucydides*; famous *Historiographers*; *Epaminondas*, *Pyrrhus*, *Miltiades*, and *Aristides*, Captains; *Plato*, *Aristotle*, *Socrates*, and *Theophrastus*; Divine Philosophers; *Demothenes*, *Aeschines*, and *Isocrates*, eloquent Oratours; with several others, too tedious to name; but to proceed to the *Provinces*.

Province of
Romania.

ROMANIA, particularly so called, a Country of it self, neither of a rich Soyl, nor pleasant Air, more inclining to cold than heat; yet by reason of the famous Cities of *Constantinople*, *Adrianople*, and others here seated, renders it the chief, and best inhabited of all *Greece*. Its chief places are *Adrianople*, so called by the Emperor *Hadrian*, who repaired it; it was added to the Kingdom of the *Turks* by *Bajazet*, Anno 1362, and continued the Seat of their Kings till *Mahomet* the Great took *Constantinople* from *Constantine Paleologus*, the last of the Eastern Emperours, about 90 years after. Blunt in his Voyage to the *Levant*, in his description of this City saith, That it is seated on three low Hills, of which that in the midst is the largest and fairest, on the top of which is a stately and magnificent Mosque, and in the Churchyard are about 30 or 40 Cocks under a stately Fountain, for People to wash before Divine Service; as also at the bottom of this Building, on the North and South sides, are 20 Conduits with Cocks, and on the East side are the Priests Lodgings and Gardens; and round the Church-yard are Baths, Cloysters, and a Colledge for the Priests, with other useful Offices, all covered with Lead. In this City are several Belestines, or Exchanges, some of good account, as likewise many fair Houses. To this City are four stately and lofty Bridges of Freestone, which make a pleasant shew, and is a fair, large, and well composed City. 2. *Gallipoli*, seated near the *Hellepont*, but within the Sea of *Marinora*. This was the first City that the *Turks* possessed in *Europe*, it being surprized by *Solyman*, Son to *Orchanes*, in Anno 1358. Here the *Beglerbegh* of the Sea hath his residence. A little below *Gallipoli* is the straightest passage of the *Hellepont*, a place formerly famous for *Xerxes* his Bridge, but especially for the two Castles of *Sesto*, on the *European* side; and *Abydo*, opposite to it on the *Asian* shoar, of note for the Loves of *Hero* and *Leander*; which Castles are now called the *Dardanelli*, and command the passage, and are the security or Bulwark of *Constantinople* on this, as those on the *Thracian Bosphorus* are on the other. 3. *Caridia*, seated on the *Thracian Chersonese*, opposite to the Isle of *Lemnos*, as also to *Troas* in *Asia*, and therefore now called *St. George's Arm*. 4. *Abdera*, the Birth-place of *Democritus*, who spent his time in Laughing. 5. *Pera*, a Town of the *Genoueses*, opposite to *Constantinople*. 6. *Galata*, also opposite to *Constantinople*, from which it is parted by a River, wherein is found a good Harbour for Shipping; and here all the Western Christians, as *English*, *French*, *Dutch*, and *Venetian* Merchants have their common residence, intermixed with *Jews*, *Grecians*, *Armenians*, and some few *Turks*: And lastly, *Constantinople*, the now Metropolitan City of all *Greece*, the Seat of the *Grand Signior*, and formerly of the Emperours of the East; first built by *Pausanias* a *Lacedemonian* Captain, about 660 years before the Birth of *Christ*. It is a City very commodiously seated for an Universal Empire, overlooking *Europe* and *Asia*, commanding the *Euxine* or *Black Sea*, the *Hellepont*, and Sea of *Marinora* or *Propontis*; on the upper part of which, and near the *Thracian Bosphorus*, it is seated, where it hath a Haven so deep and capacious, that the *Turks* for its excellency call it the Port of the World, so that for strength, plenty, and commodity, no place can compare to it. This City is in form Triangular; its Walls are composed of Stone and Brick, equally intermixed, to which it hath 24 Gates for entrance, whereof 5 regard the Land, and 19 the Water, being about 16 miles in compass; and supposed, with *Pera* and *Galata* adjoining to it, and *Scutari* on the *Asian* side, to contain about 700000 living Souls, good part of which are *Christians* and *Jews*; and it would be far more populous, were it not for the *Plague*, which like a *Tertian Ague* here reigneth every third year, and sometimes

sometimes oftner. This City is adorned with many magnificent Buildings, both publick and private, as also with curious *Statues*, and other such like Ornaments, which were brought out of *Rome*, and other parts. There is no City in the World makes so stately a shew, if beheld from the Sea, or adjoining Mountains, as this doth, whose lofty and beautiful *Cypress Trees* are so intermixed with the Buildings, that it seemeth to represent a City in a Wood, whose seven aspiring Heads (for on so many Hills it is seated,) are most of them crowned with magnificent *Mosques*, all of white *Marble*; in form round, and coupled above, being finished at the top with gilded *Spires*, some having two, some four, and some six adjoining *Turrets*, of a great height, and very slender: so that there is no City in the World hath a more promising Object, and being entred, so much deceiveth the expectation, having many vacant places, several rows of Buildings, consisting only of *Shops*, the Houses not fair, lofty, nor uniform; the Streets exceeding narrow and ill contrived; yet here are many stately Houses, where the Great persons reside; also many *Canns* for Merchants, and abundance of *Mosques*, amongst which that of *Sancta Sophia* is the chief, once a *Christian Temple*. To every one of the principal *Mosques* doth belong publick *Baggios*, *Hospitals* with Lodgings, *Sanions*, and *Ecclesiastical Persons*, which are endowed with competent Revenues: the inferior *Mosques* for the most part are built square, many of them *Pent-houses*, with open *Galleries*, where on extraordinary times they pray. The number of *Mosques* of all sorts, including *Scutara*, *Para*, *Galata*, and the Buildings that border the *Bosphorus*, are said to be about 8000. This Temple of *St. Sophia* is almost every *Friday*, (which is their *Sabbath*) visited by the *Grand Signior*, by reason of its being so near his *Seraglio*, which is divided from the rest of the City by a lofty Wall, containing in circuit about three miles, wherein are stately Groves of *Cypresses* intermixed with delightful *Gardens*, artificial *Fountains*, variety of *Fruits*, and curious *Plains*. The Buildings are low, but rich and stately, with several fair Courts one within another; and to the South-side doth joyn the *Grand Signiors Palace*, in which are also several large Courts, and stately Structures. On the left hand of one of the Courts the *Divano* is kept, where the *Bassas* of the Port administer Justice; out of the second Court is a passage into a third, into which *Christians* are not permitted entrance, but upon great favour: on the North-side stands the *Grand Signiors Cabinet*, in form of a stately *Summer-house*, having a private passage from his *Seraglio*; and from this place he takes *Barge* to delight himself on the Water. Not far from the *Palace* is a spacious place, encompassed with Houses, called the *Hippodrom* by the Ancients, and by the *Turks*, *Almidan*; where every *Friday* the *Spathies* of the Court play at *Giocho di Canni*; that is, they are mounted on Horses, and ride after one another, throwing Darts at each other, which they endeavour to avoid by their hasty turning.

The *Black Sea* is distant from *Constantinople* about 15 miles; it is much troubled with *Ice* in the Winter, neither is it so Salt as other Seas: and here the *Turks* forbid Traffick to Forreigners, there being no passage into it but by Rivers; neither this passage of the *Bosphorus* hath been always, but forced by violence of Streams that fell into the over-charged *Euxine*; where it rusheth into the *Bosphorus* there are two Rocks, formerly called *Cyanea* and *Symplegades*, so near, that at a distance they seem but one. Here upon the top of a Rock, encompassed with the Sea, stands a Pillar of white Marble called *Pompeys Pillar*; the *Bosphorus* is in length about 20 miles, but very narrow, the broadest place not exceeding a mile.

Before I pass to the other Province in *Greece*, a word or two as to the *Manners*, *Dispositions*, *Religions*, &c. of the *Turks*. They are for the most part of a good complexion, full-bodied, proportionable, and of good stature; they keep the hair of their Heads shaved, only a lock on the hinder part; but their Beards they wear at full length, which with them is a sign of Gravity and freedom, they not allowing their *Slaves* to wear Beards; they are subtile, and of a quick wit, are generally very courteous to Strangers, but bear an inveterate

The Dispositions, Manners, &c. of the *Turks*.

inveterate hatred against *Christians*; they are exceeding jealous of their Wives, denying them the liberty of the Streets, or going to their *Mosques*; their Salutations are with an inclination of the head and body, laying their hands on their bosoms; they use much Perfumes in their Garments, and all of them affect cleanliness so religiously, that besides customary Lotions, and daily frequenting *Baths*; they never so much as make water, but they wash their hands and privities, at which business they couch to the Earth, fearing their Garments should be defiled with any of their Excrements, which is held a pollution and hindrance to the acceptance of Prayer; and if they bath not twice or thrice a week, they are esteemed Nasty: they use not much exercise, loving a Sedentary life, but delight in riding; yet generally they have some Trade, which they employ part of the day in, even the *Grand Signior*.

Their Food is gross, refusing all dainties for a piece of fat *Mutton*, which they boil in *Rice*; and with *Pease*, *Rice*, and *Mutton*, they make *Pottage*; they abstain from *Blood*, *Hogs-flesh*, and things strangled, neither care they for *Fish* or *Fowl*, which are here numerous and so gentle, that they will suffer themselves to be taken: they have neither *Tables* nor *Stools*, but sit upon the Floor (which is covered with *Tapestry*, or the like) cross-legg'd; their Dishes are made with feet, and their Spoons have long handles like Laddles. Their common drink is *Water*, also *Sherbet*, *Usaph*; but above all *Coffee*, which is held in great esteem. As to their Sciences and Trades, they are not over ingenious, nor knowing, contenting themselves with such as are necessary for them. By their Law they are exhorted to marry for the propagation of their Religion, every man being allowed four Wives, which must be of the *Turkish* Religion, besides as many Concubines (which are *Slaves*, and of any Religion) as he is able to keep; they buy their Wives of their Parents, recording the Contract; and in their Nuptial Rites they observe many Ceremonies, some of which I shall take notice of. The day before the Marriage is spent in Feasting, the Man his Friends, and the Woman hers, who at night bath and anoint her, and so depart till the next Morning, and then she is dressed in her best Apparel; all things being ready, the Relations and Friends of the Bridegroom, who are all mounted on Horse-back, ride two by two to the Brides to conduct her to the Bridegrooms, who is also ready mounted and richly habited, according to his quality, to receive his never seen wife, who (after the Nuptial Ceremonies are performed) is conducted to the Bride-chamber, where she is undrest and made ready for his enjoyment; the rest of the day is spent in feasting and merriment. By the Law, he is obliged to shew equal respect to all his Wives, and to give them due benevolence alike, and upon failure they may justly complain to the *Cadi*, who will grant her a Divorce; but the Women are little better treated than *Slaves*, giving their Husbands respect and reverence due to a Master, not sitting at meat with him, nor meddling with Household affairs, nothing being required, but to please their Husbands, to live peaceably together, and to nurse their Children.

Their Religion is contained in their *Alcoran*, made by *Mahomet* their Prophet; it is written in *Arabick* Rhime, and forbid by him to be written or read in any other Language; which said Book is so revered by them, that it is not touched with unwashed hands; they call it the *Book of Glory*, and Guide to Paradise: They believe in God, and hold *Jesus Christ* for a greater Prophet than *Moses*, but *Mahomet* for the greatest; they deny the Divinity of Christ, yet confess him to be the Son of the *Virgin Mary*; that he was conceived by the smell of a Rose, which the Angel *Gabriel* brought her, and that she bore him at her Breasts; that he was free from the Temptations of the Devil and Original sin: he is called in the *Alcoran*, the Word and Breath of God, said to raise up the dead, to give sight to the blind, to cure the lame, to give speech to the dumb, to know the secrets of hearts, and that by his Vertues his Disciples wrought Miracles, and that he shall return to Judgment about 40 years before the end of the World to judge, save, and condemn *Christians*, as *Mahomet* shall do them. By their

Their Food.

Their Religion.

The *Alcoran* now printed in English.

their *Law* they are obliged to pray seven times a day; their Sabbath is on *Friday*, which they strictly observe, and are very devout at their worship; and at the doors of the *Mosques* they put off their Shoes, as a place too holy to defile with dirty Shoes; and the *Women* are not permitted to come into their *Mosques*, but have apartments for themselves. They observe two Solemn times in the year, which are both *Lents*, one is called *Ramdan*, which continueth a Month, and the other *Byram*, which lasteth three days. They admit of no Hell for any, but those who believe not *Mahomet*; but allow of a *Purgatory*, which holds but till *Dooms-day*, where in their *Graves* (which they say is the place of *Purgatory*) they are inflicted with pain by a bad *Angel*, whose fury is lessened by a good one, according to the life the party led when living; and at the day of *Doom*, *Moses*, *Christ*, and *Mahomet*, shall bring their several Followers to Judgment, and intercede for them; and that *Cain*, the first Murderer, shall be the Leader of the *Damned*; and all shall receive the reward due unto them, the Just into *Paradise*, and the Damned into *Hell*, where they shall be tormented for ever; yet they hold a distinction amongst the Damned, for those that have committed no great sins shall go into *Purgatory*, from whence they shall shortly be delivered. *Paradise*, according to *Mahomet's* description, is a place of all delight, where they shall have stately Palaces richly furnished, *Christalline Rivers*, *Fields* and *Trees* always in their verdure, whose *Fruits* shall be delightful to the taste, and their shape pleasing to the eye; under whose fragrant shades they shall spend their time with amorous and handsome *Virgins*; not such as have lived in the World, but on purpose created for them, whose lost *Virginities* shall daily be restored to them, and that they shall ever continue young, the Men at the Age of 30, and the Women at 15; and that Boys of Divine features shall administer to them, and set before them all varieties of curious Meats.

Their Justice.

Their *Justice* is grounded on their *Alcoran*, in which they observe this Rule, *To do as they would be done unto*. Their *Judges* for the most part are always *Ecclesiastical Persons*, amongst which there are many Orders, of which the chief is the *Musfy*, who decides great Cases, and to him lie *Appeals*, and his Decrees the *Grand Turk* will not question: then the *Cady*, who hath over him the *Moulacady*, or *Lord Chief Justice*. All the *Judges*, except the *Musfy*, are limited to set Precincts, and if they are found corrupt, are severely punished; the execution of their Justice is very severe and cruel, and very speedy; and if the business be matter of fact, upon the least complaint the *Parties* and *Witnesses* are brought before the *Judge*, and according to evidence and Justice, gives his Sentence, which in few hours is executed; and a False-witness, if convicted, suffers the same punishment as the accused should have done, if found guilty.

Their Forces.

The *Great Turk* is very powerful in his *Forces*; his *Infantry* are of two sorts, the one raised out of *Towns* and *Cities*, and the other is the *Fanizaries*, in which he puts the greatest confidence. Their *Cavalry* are also of two sorts, one the *Spahyglans*, from whom are chosen the Troops which guard the *Grand Signiors person*, and the other the *Spahy-Tymariots*, which are such as hold Land free from all Duties, in lieu of which they are obliged to furnish him with 2, 3, 4, 5, 10, or more or less Men and Horses at their own charge, as occasion requires, according to the quantity of Land they hold; and besides these there are other sorts of Horsemen, who are *Volontiers*; some serving for devotion to gain *Paradise* by dying for *Mahomet's* Cause, others serving for the gains of the booty and spoils of the Countries, and others to merit a *Timar*; and all are very expert in *Military affairs*. As for their *Sea Forces* they are but small, as not much minding it, most of them being *Gallies*; yet are they often found troublesome to *Christians*.

Their Funerals.

Concerning their *Funerals*, so soon as Life is departed several of their *Priests* are sent for, who after they have performed certain *Ceremonies*, and desired *God* to have mercy on their *Soul*, they wash the *Corps*, and wrap it in Linnen, but not tie it neither at head nor feet, then lay it on a *Bier*, setting a *Turbant* at the upper end, and so carry it to the Grave; which for the poorer

fort

fort are usually made by *Highway-sides* and in *Fields*, having two stones of white Marble, one at the head and the other at the feet, with an Inscription concerning the deceased; but the better fort have *Sepulchres* in their *Gardens*. As they are thus carried to their Graves, some of the *Dervices* go before with lighted *Tapers*, then follow the *Priests* singing, and after them their *Relations* and *Friends*: their *Graves* are boarded on the sides and bottom instead of a *Coffin*, and being laid in, are covered with another board to hinder the Earth from falling, but high enough that one may kneel; for they hold that two terrible and black *Angels*, which they call *Gudequir* and *Mongir*, do immediately come to the *Grave* and unite the Soul to the Body, demanding how he hath lived; and if he gives them satisfaction they depart, and two white *Angels* come and protect him unto the day of Judgment, one sitting at his head, and the other at his feet; but if he can give no good account of his life, then the terrible black *Angels* grievously torment him until the day of *Doom*. A *Purgatory* is so obnoxious unto them, that in their *Mattins* they beseech *God* to free them from the examination of those terrible black *Angels*, as also from the punishment of the Grave, and their evil Journey. But to proceed to the other Provinces in *Greece*.

The Province of *MACEDONIA* is at present severed into three parts, viz. into the Territory of *Jamboli* towards the North, whose chief places are *Heraclea*, *Bylazora*, *Joro*, and *Sybero-Caspæ*, famous for its rich Mines of Gold and Silver. The second part is *Camelolitaria*, being its Southern parts, and on the borders of *Thessaly*; its chief places are, 1. *Pidna*, seated on the influx of the River *Alaicmon*, which Town was besieged and took by *Cassander*, in which Siege he took *Olympias* the Mother, *Roxane* the Wife, and *Hercules* the Heir of *Alexander* the Great; all which he put to death. 2. *Pella*, seated on the same shoar, the Birthplace of the said *Alexander*. 3. *Edissa*, and 4. *Seydra*, both Midland Cities. The third part is called *Migdonia*, or the particular *Macedonia*, lying in the midst of the Province; its chief places are 1. *Salonichi*, anciently called *Thessalonica*; to the People of which City *St. Paul* wrote two of his *Epistles*; it is seated on the *Egean Sea*, is very populous, inhabited with *Christians*, *Turks*, and *Jews*; and chiefly with the last, who are here more numerous than in any other part of *Turkey*, and is a place of great Commerce, and is the fairest and richest City in all *Macedonia*. 2. *Stagira*, the Birthplace of *Aristotle*; 3. *Pallene*, sacred to the *Muses*; and 4. *Neopolis*, on the confines of *Romania*.

Province of Macedonia.

The Province of *ALBANIA* lieth on the *Adriatick Sea*, famous for being the Country of that eminent and brave Souldier *George Castriot*, called by the *Turks* *Scanderbeg*; its chief places are 1. *Durazzo*, a place of great strength. 2. *Valona*, a good City seated on the Sea-shoar, opposite to *Otranto* in *Naples*. 3. *Croja*, under whose Walls *Amurat* the Second, that damned wretch, finished his wicked life. 4. *Scutari*, or *Scodra*, famous for its resisting the *Turks*: and 5. *Belgrado*; and 6. *Albanopoli*.

Province of Albania.

The Province of *THESSALY*, now called *JANNA*, is a Country no less fertile than pleasant; it lieth South of *Macedonia*; and is famous first for the Hill *Olympus*, which for its height, is by the *Poets* taken for Heaven; then for its pleasant Vale of *Tempe*, called the Garden of the *Muses*; and thirdly, for the *Pharjalian Fields*, where the Empire of the World was disputed in two great Battles; the one betwixt *Cæsar* and *Pompey*; and the other betwixt *Brutus* and *Cassius* on the one side, and *Anthony* and *Augustus* on the other. The chief places in this Province are, 1. *Armiro*, now the Seat of a *Turkish Sungiac*. 2. *Larissa*, seated on a fair River, which at a small distance falls into the Gulph of *Salonichi*. 3. *Trieca*, and *Pharjalia*.

Province of Thessaly.

The

Province of
Epir.

The Province of *EPIRE*, now called *CANINA*, is very Mountainous, hath for its chief places (possessed by the *Turks*) *Praveza* and *Larta*, both Sea-Towns; and the chief places in the *Venetians* possessions, are *Torre de Butrinto* and *Perga*, both Sea-Towns and places of good account; opposite and nigh to which is the Isle of *Corfou*. In this Province is Mount *Pindus*, sacred to *Apollo* and the *Muses*; and here are also the *Acroceraunean Hills*, so called for their being so subject to *Thunder-claps*.

Mount Pindus.

Province of
Achaia.

The Province of *ACHAIA*, now called *LIVADIA*, washed on the East with the *Aegean Sea*; it is divided into these parts, viz. *Aetolia*, *Attica*, *Boetia*, *Locris*, *Megaris*, *Doris*, and *Phocis*, in which parts are several good Cities and Towns; amongst which are 1. *Athens*, now *Sitines*, more famous for its Antiquity than any thing else, being now scarce any other than a *Fishers Town*; but formerly a large, rich and stately City, the Nursery of Learning, and a place from whence all *Arts* and *Sciences* spread themselves all over *Europe*. 2. *Thebes*, now *Stives*, seated on the River *Cephissus*, famous for the Wars here made between *Polynices*, and *Eteocles*, Sons to Prince *Oedipus*; it was sack'd by the *Macedons*, after which it was re-edified by *Cassandra*, but of no account nor beauty to what it was formerly. Next to this City are the Straights not above 75 foot broad. 3. *Lepanto*, chief of *Aetolia*, seated in the bottom of a Gulph so called, and where *Augustus* and *Anthony* fought for the Empire of the World; and where more lately was that signal Battle between the confederate *Christians* and the *Turks*. This City enjoyeth a good Trade, and affordeth several good Commodities, as *Silk*, *Oils*, *Cottons*, *Galls*, *Anniseeds*, *Wax*, *Hony*, *Currans*, *Wines*, &c. 4. *Marathon*, of note for the Victory of *Miltiades*, gained against the powerful Army of *Darius*, which consisted of 100000 Foot, and 10000 Horse. 5. *Megara*, where *Euclid* taught *Geometry*. 6. *Platea*, nigh to which was fought an exceeding great Battle between the *Grecians* and the *Persians*. 7. *Delphos*, famous for the Temple of *Apollo*, which was destroyed by the *Phocians*, who took from it 60 Tuns of Gold. 8. *Sparta*, formerly of great Account; and 9. *Micena*, famous for the Temple of *Juno*, as also for the habitation of *Agamemnon*. Nigh to this City was the Lake of *Lerna*, where *Hercules* slew the *Lernian Seven-headed Hydra*. In this Province is the famous Temple of *Aesculapius*; where is also the Mount *Helicon* and *Parnassus*, much famous by the *Poets*; and here are also those pleasant *Arcadian Plains*, and the places where the *Olympian Games* were solemnized, with several other memorable places of Antiquity.

Peloponnesus,
or the *Moria*.

PELOPONNESUS, now called *MOREA*, is a *Peninsula* bounded with the Sea, except where it joyneth to *Achaia* by an *Isthmus* of about six miles in breadth; the whole *Peninsula* is about 600 miles in compass, and contained once many flourishing Provinces, as *ARCADIA*, *ARGORIS*, *ACHAIA PROPRIA*, *ELIS*, *LACONIA*, and *MESSENIA*; but at present it is one sole *Turkish* Province. The People were accounted the chief of all the *Grecians*, and gave Rules to the rest as subordinate unto them. The chief places are, 1. *Corinte*, seated at the foot of the *Acrocorinthian Hills*, hard by the Fountain *Pyrene*; a small Town, and of little note to what it was, being out of the ruins of the ancient and famous *Corinth*; which was a place of great strength and power. 2. *Misitra*, once of good account. 3. *Thalana*, nigh unto which is Mount *Tenarus*, from whence *Hercules* drew *Cerberus*; as also the Lake *Lerna*, where the said *Hercules* slew the Monster *Hydra*. 4. *Selassia*, where *Antigonus* vanquished *Cleomenes*. 5. *Nemaa*, where *Hercules* slew the *Lions*. 6. *Olympia*, very famous for the Statue of *Jupiter Olympicus*, which was 60 Cubits high, and of a proportionate thickness, being made of *Gold* and *Ivory*; and in honour to this *Jupiter* were the *Olympick Games* instituted by *Hercules*, and performed on the Plains of this City. 7. *Megalopolis*, the Birth-place of that eminent Historian *Polybius*. 8. *Mantineia*, nigh unto which the *Theban Army*, which consisted of 30000 Foot and 3000 Horse routed the Army of the *Athenians* and *Spartans*, which consisted

consisted of 2000 Horse, and 25000 Foot, where that gallant Leader *Epaminondas* received his death's wound. 9. *Lacedemon*, 10. *Argos*, 11. *Thebes*, now ruined; but the chief places for Traffick now remaining, are 12. *Modon*, 13. *Petras*, and 14. *Coron*, all three Cities seated on the Sea-shoar, subject to the same Customs, and found to afford divers good Commodities, the product of *Turkey*.

The ISLES seated in the GRECIAN or AEGEAN, IONIAN and ADRIATICK Seas.

IN these Seas there are several Isles, many of which are of good note, and well frequented by *Merchants*; most of which are in part, if not altogether in the possession of the *Grand Signior*; yet the *Venetians* are not quite expunged. But the *Turk* hath divided all or most of them into eight *Begler-bys*, and 60 and odd *Sangiacats*, that is, into general and particular Governments.

The AEGEAN or GRECIAN ISLES.

The chief of the *Aegean Isles* are 1. *NEGROPONTE*, in the power of the *Turks*, in circuit 365 miles; Its chief places are 1. *Negroponte*, seated in a Gulph so called; 2. *Caristo*, and *Dion*, a Sea-port Town.

Isle of Negro-
ponte.

2. *STALIMENE*, of old *LEMNOS*, about 100 miles in circuit, well peopled by *Grecians*, except three Towns which the *Turks* keep strongly fortified to keep them in awe. Its chief Town is *Lemos*, or *Mirina*, but of no great note. Here is a Sovereign Mineral against infection, called *Terra Sigillata*; the Earth thereof is made into small Pellets, and sealed with the *Turk* Stamp, and so dispersed and sold to *Merchants* for an excellent Antidote.

Isle of Stali-
ment.

3. The *SPORADES* and *CYCLADES* are a great body of several small Isles dispersed about this Sea or Archipelago, and lie so thick, that they oft-times become dangerous to *Sea-men*, especially in Storms. The chief of these Isles are, 1. *Milo*, so called for its abounding in *Hony*; it is about 60 miles in compass, very fertile, and affordeth store of *Grain* and *Oil*, but no *Wine*; its chief place is so called. 2. *Tira*, 3. *Tiresio*, 4. *Nio*, 5. *Stapalia*, about 50 miles in circuit, whose chief place is so called. 6. *Morgo*, 7. *Nicpha*, about 75 miles in compass. 8. *Livila*, 9. *Zimara*, 10. *Rachia*, 11. *Siphana*, 12. *Micone*, 13. *Teno*, 14. *Helena*, 15. *Engia*, in a Gulph so called; all small Isles. 16. *Fermentia*, about 60 miles in circuit. 17. *Zea*, about 50 miles in compass. 18. *Andri*, about 80 miles in compass, not far from *Negroponte*, and is found to afford the same Commodities; its chief place bears the same name. 19. *Cos*, more towards *Asia minor*, whose chief Town is so called, and is inhabited by *Turks*, but the rest by *Grecians*. In this Isle was born *Apelles*, that famous Painter; as also *Hippocrates*, that revived *Physick*, when it was lost; and here *Aesculapius* had his Temples and Altars, where he was worshipped. 20. *Delos*, famous for the Temple of *Apollo*, as also for a Custom here used, not to permit the birth of Children, nor dying of People, being sent to *Rhena*, an Isle not far distant. 21. *Nansio*, 22. *Policandro*, 23. *Pira*, 24. *Ghiervo*, 25. *Pergola*, 26. *Sorphino*, 27. *Pario*, 28. *Sirna*, and 29. *Sidrilie*; all small Isles of little note.

Isles of Spora-
des and cycla-
des.

4. *CANDIA*, or *CRETA*, (now in the *Turks* possession) an Isle seated in the Mouth of the *Aegean Sea*, in compass about 590 miles, of a fertile Soil, and affordeth to *Merchants* several good Commodities; but *Corn* is not over plentiful, which defect is supplied from *Peloponnesus*. It is very

Isle of Candia.

very populous, and hath many good Towns; the chief of which are 1. *Candia*, the Bulwark of *Christendom*, till lately gained from the *Venetians*; in which Siege it was ruined, being before a good City. 2. *Suda*, a Maritim Town, enjoying a commodious Haven, which by the *Turks* is well fortified and defended by two *Castles*. 3. *Canea*, and 4. *Sittia*. In this Isle lived *Strabo*, that famous *Cosmographer*.

5. *SAMOTHRACIA*, a small Isle, of note for being the Birth-place of *Samo*, one of the *Sybits*; and *Pythagoras*, that Divine *Philosopher*.

6. In the *Aegean Isles*, or *Archipelago*, are these Isles, 1. *SCIRO*, Northwards of *Negroponte*, from which it is not far distant. 2. *SCHIATI*; 3. *PELAGISI*, towards the Gulph of *Salonichi*. 4. *TASSO*, a small Isle, seated in the entrance of the Gulph of *Contessa* in *Macedonia*; and 6. *LENIBRO*, also a small Isle, not far from *Lemnos*.

The IONIAN ISLES.

The principal of the *IONIAN Isles*, are 1. *ZANTE*, about 50 miles in circuit, and about 7 Leagues from *Peloponnesus*, under the obedience of the *Venetians*; it is wonderful fruitful in *Oils* and *Wines*, but especially in *Currents*. The chief City bears the name of the Isle, a place not very large nor beautiful, but fortified with a strong *Castle*, which commandeth not only the *Town* and *Harbour*, but a good part round about it. The Isle is much troubled with *Earthquakes*, in regard of which they build their Houses very low.

2. *ZEPHALONIA*, about 120 miles in compass, of a fertile Soil, and affords the same Commodities as *Zante*; but the *Currents* are smaller, and not so good. Its chief place bears the name of the Isle. 2. *Augustali*, 3. *Gulfardo*, and 4. *Nollo*.

3. *CORFU*, about 50 miles in length, and 24 in breadth, seated 12 miles from *Epirus*, and very convenient for the *Venetians*, who are the Masters of it, being in the Center of their Maritim Territories. It is fruitful in *Oil*, *Hony*, *Wax*, and some other Commodities; its chief City is so called, and is now reputed to be one of the Bulwarks of *Christendom*, and the Key of the *Venetian State*, being held impregnable, oft-times having resisted the fury of the *Turks*. It is seated at the foot of a Mountain, on the Summit of which are built two strong *Castles*, seated on high Rocks, which are as strongly fortified; the other place of note are *Castello*, *St. Angelo*, and *Pagiopoli*.

4. *CERIGO*, 60 miles in compass, about five miles from *Cape Malo* in the *Morea*. It is defended by Rocks, which in themselves are inaccessible, out of which the Inhabitants take abundance of *Marble*: it hath many Havens, but none commodious for Shipping. Its chief Town bears the same name, where was formerly a Temple dedicated to *Venus*, out of which *Helena* the wife of *Menelaus* was ravished, and stoln by *Paris*.

5. *SAINT MAURA*, where stood a Temple dedicated to *Apollo*, where Mad-brain'd and unfortunate Lovers were cured of their phrenzies, by casting themselves head-long into the Sea. Its chief place bears the name of the Isle, and is inhabited by *Jews* that were driven out of *Spain*; and this of all the *Ionian Isles* is under the *Turks* obedience.

6. STRI-

6. *STRIVALIS*, seated opposite to *Messina*, two small Isles of no great account, inhabited by some few *Greek Colonies*, or *Fryars*, who never go out of the Isles; neither do they permit Women amongst them, but as they die, have a new supply; they live by their labour, their diet is on *Herbs*, *Roots*, *Oil*, *Olives*, and the like. *Flesh* they are denied, but may eat *Fish* sometimes.

7. *VAL DE CAMPARA*, about 56 miles in compass, Northwards of *Zephalonia*, famous for the Birth place of *Ulysses*. This Isle affordeth those Commodities that are found in *Zant*, and the *Currents* are the best and fairest, but in less quantities.

The ADRIATICK ISLES.

The *Adriatick Sea* is in length 700 miles, and about 140 in breadth; the *Venetians* are Masters of them, to whom the Duke is espoused every *Ascension day* by casting in of a Ring; a Ceremony performed with great state.

The *Islands* seated in this *Sea* are not many, and those that be are neither great nor famous; the chief of which are *ZARA*, a small Isle, but the chiefest for Traffick, having divers good Harbours. It is fruitful in *Wines*, *Grains*, *Cattle*, and some *Oils*. 2. *VEGEA*, fertile in *Wine* and *Pulse*, about 10 Leagues in compass. 3. *LESINA*, about 50 Leagues in compass, being the largest of all the *Adriatick Isles*, very fertile throughout; its chief Town being so called, a place though unwall'd, yet of good strength, by reason of its strong Fortress. 4. *CHERSO*, well stored with Cattle. 5. *CURZULO*, a fair, fruitful, and populous Isle, whose chief place is so called. 6. *GRISSA*, about 100 miles in circuit, an Isle rich in *Salt-pits*. 7. *AB-SIRTIDES*; 8. *LISSA*; 9. *ARBE*; and 10. *BRAZZIA*, with some others of no great note.

The chief Rivers in *Turkey* in *Europe* are the *Drin*, the *Alsea*, the *Penea*, the *Wardur*, the *Mariza*, and the *Don*, or *Danube*, which of all others is the strongest and most considerable; the others being, for the most part, only famous in Antiquity.

G 2

FRANCE

Four on this side the LOIRE, whose Provinces, Parts, and chief places are	PICARDY,	Higher; as	True Picardy, ———	Amiens, ———
		Lower; as	Vernandois, ———	St. Quentin, ———
			Ponthieu, ———	Abbeville, ———
			Boulonois, ———	Calais, ———
	NORMANDY,	Higher; as	Vexin, ———	Rouen, or Roan, ———
		Lower; as	Normandy, ———	Caux, ———
			Auge, ———	Cacn, ———
			Bessin, ———	Alençon, ———
	The ISLE of FRANCE; where are		Coutance, ———	Bayeux, ———
			Idle of France, ———	Paris, ———
			Beauvaisis, ———	Beauvais, ———
			Valois, ———	Sens, ———
	CHAMPAIGNE; where are		Solfonnois, ———	Solfonnois, ———
			Brie, ———	Meaux, ———
			Remois, ———	Reims, ———
			Champaigne, ———	Troyes, ———
	BRETAGNE,	Higher,	Bassigny, ———	Langres, ———
			Senonois, ———	Sens, ———
		Meath,		Rennes, ———
		Lower,		St. Maloer, ———
	ORLEANOIS,	On this side the LOIRE,		Nantes, ———
				Vannes, ———
		Upon the LOIRE,		Morlaix, ———
		Beyond the LOIRE,		Brest, ———
	BOURGOGNE, or BURGUNDY,		le Maine, ———	le Main, ———
			Perche, ———	Mortagne, ———
			Reauce, ———	Chartres, ———
			Nivernois, ———	Nevers, ———
	LIONNOIS, and AUVERGNE,		Orleanois, ———	Orleans, ———
			Blaisois, ———	Blais, ———
			Touraine, ———	Tours, ———
			Anjou, ———	Angiers, ———
	LIONNOIS, and AUVERGNE,		Poitou, ———	Poitiers, ———
			Aunis, ———	Rochele, ———
			Angoumois, ———	Angoulême, ———
			Berry, ———	Burgos, ———
	BOURGOGNE, or BURGUNDY,		Bourges, ———	Dijon, ———
			Chalonnois, ———	Autun, ———
			Auxerrois, ———	Beaune, ———
			Bresse, ———	Challons, ———
	LIONNOIS, and AUVERGNE,		Lionnois, ———	Lions, ———
			Forez, ———	Monbrizon, ———
			Bourbonnois, ———	Moulins, ———
			Auvergne, ———	Clermont, ———
	LIONNOIS, and AUVERGNE,		la Marche, ———	Gueret, ———
			Guienne, ———	Pourdeux, ———
			Saintonge, ———	Saintes, ———
			Picquart, ———	Perigueux, ———
	LIONNOIS, and AUVERGNE,		Limousin, ———	Limoges, ———
			Vergerue, ———	Rodez, ———
			Quercy, ———	Chors, ———
			Agénais, ———	Agén, ———
	LIONNOIS, and AUVERGNE,		Bazadois, ———	Bazas, ———
			Albret, ———	Nérac, ———
			Condomois, ———	Condom, ———
			Armagnac, ———	Aux, ———
	LIONNOIS, and AUVERGNE,		Guasconne, ———	Aire, ———
			les Landes, ———	Dax, ———
			Basque, ———	Bayonne, ———
			Lower Navarre, ———	St. Palais, ———
	LIONNOIS, and AUVERGNE,		Bearn, ———	Pau, ———
			Bigorre, ———	Lescar, ———
			Comminges, ———	Tarbes, ———
			Toulouze, ———	St. Bertrand, ———
	LIONNOIS, and AUVERGNE,		Carcassonne, ———	Thoulouze, ———
			Foix, ———	Carcassonne, ———
			Albigeois, ———	Foix, ———
			Narbonne, ———	Narbonne, ———
	LIONNOIS, and AUVERGNE,		Beziers, ———	Beziers, ———
			Nîmes, ———	Nîmes, ———
			Givaudan, ———	Montpellier, ———
			Velay, ———	Nîmes, ———
	LIONNOIS, and AUVERGNE,		Vivaraire, ———	le Puy, ———
				Viviers, ———
				Vienné, ———
				Valence, ———
	LIONNOIS, and AUVERGNE,			Grenoble, ———
				Embrun, ———
				Pignerol, ———
				Aix, ———
	LIONNOIS, and AUVERGNE,			Arles, ———
				Marcelle, ———
				Forcalquier, ———
				Tolon, or Tholoz, ———
	LIONNOIS, and AUVERGNE,			Bar-le-Duc, ———
				St. Michael, ———
				Metz, ———
				Toul, ———
	LIONNOIS, and AUVERGNE,			Verdun, and Nancy, ———
				Avignon, ———
				Orange, ———
				Trevoux, ———
	LIONNOIS, and AUVERGNE,			Sedan, ———
				Charleville, ———

The Kingdom of FRANCE, with its Estates and Provinces, as they are divided into twelve General Governments, or 3 times 4, according to their situation, to wit,

Four beyond the LOIRE, whose Provinces, Parts, and chief places are

To which are present may be added

And divers small Estates and Principalities

Between Dauphin and Provence, the Country of the Principality of Avignon, the Sovereignty of Dombes, the Principality of the Principality of Arches,

FRANCE

Towards the Sea; as	PICARDY, as it is divided in the	Lower; where are	Boulonois, ———	Calais, ———
			Ponthieu, ———	Ardres, ———
			True Picardy, ———	Boulognois, ———
			Santerre, ———	Montreuil, ———
	NORMANDY, as it is divided into the	Meau, ———	Vernandois, ———	Rue, ———
		Higher, ———	Tierrache, ———	Abbeville, ———
				St. Vallery, ———
				Amiens, ———
	NORMANDY, as it is divided into the			Doulen, ———
				Corbie, ———
				Perone, ———
				Mondidier, ———
	NORMANDY, as it is divided into the			St. Quentin, ———
				Cailler, ———
				Henri, ———
				Guise, ———
	NORMANDY, as it is divided into the			Fere, ———
				Capelle, ———
				Vervins, ———
				Marle, ———
	NORMANDY, as it is divided into the			Candebes, ———
				Dieppe, ———
				Havre de Grace, ———
				Rouen, or Roan, ———
	NORMANDY, as it is divided into the			Gisors, ———
				Font de l'Arche, ———
				Eureux, ———
				Lifieux, ———
	NORMANDY, as it is divided into the			Lalgle, ———
				Hanleur, ———
				Cten, ———
				Alençon, ———
	NORMANDY, as it is divided into the			Secr, ———
				Falaife, ———
				Bayeux, ———
				St. Lo, ———
	NORMANDY, as it is divided into the			Vire, ———
				Coutance, ———
				Carenten, ———
				Cherbourg, ———
	NORMANDY, as it is divided into the			Granville, ———
				Auranches, ———
				Mortain, ———
				Font Ordon, ———
	NORMANDY, as it is divided into the			St. Michael, ———
				Paris, ———
				St. Denis, ———
				Sens, ———
	NORMANDY, as it is divided into the			Creffy in Valois, ———
				Pont Oyle, ———
				Maigny, ———
				Chaumont, in Vexin, ———
	NORMANDY, as it is divided into the			St. Germain, in Laye, ———
				Poitly, ———
				Mante, ———
				Moulans, ———
	NORMANDY, as it is divided into the			Breux, ———
				Monfort l'Amaury, ———
				Dourdan, ———
				Namours, ———
	NORMANDY, as it is divided into the			Mover, ———
				Melan, ———
				Corbeil, ———
				Meux, ———
	NORMANDY, as it is divided into the			Chateau Thierry, ———
				Beauvais, ———
				Clermont in Beauvaisis, ———
				Solfonnois, ———
	NORMANDY, as it is divided into the			Compeigne, ———
				Noyon, ———
				Laon, ———
				Chauny, ———
	NORMANDY, as it is divided into the			Chateau Regnaud, ———
				Sedan, ———
				Charleville, ———
				Retel, ———
	NORMANDY, as it is divided into the			Rocroix, ———
				Douchery, ———
				Moffet, ———
				Moufon, ———
	NORMANDY, as it is divided into the			Reims, ———
				Fifmes, ———
				Troyes, ———
				Chalons, ———
	NORMANDY, as it is divided into the			Epemay, ———
				Viry le Francois, ———
				St. Menchoult, ———
				Bar upon Aube, ———
	NORMANDY, as it is divided into the			St. Didier, ———
				Langres, ———
				Chaumont in Bassigny, ———
				Joigny, ———
	NORMANDY, as it is divided into the			Sens, ———
				Joigny, ———
				St. Florentin, ———
				Tonnerre, ———
	NORMANDY, as it is divided into the			Monte reau satuyoune, ———
				Provins, ———
				Sefanne, in Brie, ———

FRANCE

					Rennes, Vitray, Dol, St. Malo, et Dinan. Nantes, Vennes, Ploermes, St. Brien, Lamballe, Auray, Hannebour, Blavet, or Port Louys, Lantriguet, or Treguier, Leonduol, or St. Pol de Leon, Morlaix, Brest, (ville), Quimpercorentin, or Cornouaille, Quimperlay. le Maine, Mayenne, Laval, Domfront. Nogent le Retrou, Mortaigne, Verneuil, Chartes, Estampes, Chateau Dun, Vendosme. Montargis. Nevers, la Charite, Clamecy, Donzy. Orleans, Gien. Blois. Tours, Amboise, Loches, Chinon. Angiers, Saumur, la Fleche. Voitiers, Maillezais, Lufon, Châtelleraud, Niort, Luignan, Monmorillon, Partenay, Touars, Loudun, Richelieu, Rochell. Angouleme. Burges, Issoudun, Chateau Roux, Remoretin, Argenton, Sancerre, Boisbelle. Dijon, Autun, Beaune, Auxonne. Chalon. Mafcon, Tornus. Semur. Mafcon upon the Seine. Charolles, Auxerre. Bourge, Belleu. Gex. Lions. Tretoux. Monbrizon, Roenne, St. Etienne de Furens. Ville Franche. Bourbon the Archambaul, Molins. St. Pierre le Moutier. Cleremont in Auvergne, Riom, Monferand, Thiers. Vie le Comte, St. Etour, Orilhac, Brioude, Ifsire. Gueret. Dorot, Belay. la Marche,
				Higher, Meau, Lower, le Maine, Perche, la Beauce, Gassenois, Nivernois, Orleanois, Blaisois, Touraine, Anjou, Poictou, Aunis, Angoumois, Berry, the Sovereignty of Bourgogne, Chalonnois, Mafconnois, Auxois, the Country of Montagne, Charollois, Auxerrois, Brete, Rugey, and Veromey, Balliage, Lionnois, the Sovereignty of Dombes, Forez, Beaujolois, Bourbonnois, Nivernois in part, Auvergne, Lower, Auvergne, Higher, la Marche, Higher, Lower,	
				BRETAGNE; which may be divided into the On this fide the LOIRE, as Upon the LOIRE, as Below the LOIRE, as ORLEANOIS; under the name of which may be comprised the Provinces or Countries; as they lie Beyond the LOIRE, as DUTCHY of BOURGOGNE; where are Countries adjacent; as Above the LOIRE, as LIONNOIS; where are LIONNOIS, and AUVERGNE; which may be divided in AUVERGNE, where are	

FRANCE

<p>About the GARONNE, as</p> <p>Between the GARONNE, and the RHOSNE, as</p> <p>Between the RHOSNE, and the ALPES, as</p>	<p>GUIENNE, and GUAS- COGNE,</p> <p>LANGUE- DOC, which is divided into</p> <p>DAUPHINE, with its Parts</p> <p>PROVENCE, with its Places</p>	<p>GUIENNE; where are</p> <p>GUASCOGNE; where are</p> <p>Higher LANGUEDOC; where are</p> <p>Lower LANGUEDOC; where are</p> <p>SEVENNES; where are</p> <p>Towards the RHOSNE, or ROANE,</p> <p>In the midst of the Country</p> <p>Towards the Alpes,</p> <p>Towards the Rhosne, or Roane,</p> <p>Upon the Sea,</p> <p>In the midst of the Country,</p> <p>Towards the Alpes,</p>	<p>Saintonge,</p> <p>Guienne,</p> <p>Perigort,</p> <p>Agenois,</p> <p>Limosin,</p> <p>Quercy,</p> <p>Rovergue,</p> <p>Bazador,</p> <p>Lanes,</p> <p>Guascogne,</p> <p>Albret,</p> <p>Condornois,</p> <p>Armagnac,</p> <p>Comminge,</p> <p>Conferans,</p> <p>Bigorre,</p> <p>Bearn,</p> <p>Lower Navarre,</p> <p>Basque,</p> <p>Touloufan,</p> <p>Albigois,</p> <p>Auraguais,</p> <p>Foix,</p> <p>Quarter of Narbone,</p> <p>Quarter of Beziers,</p> <p>Quarter of Nismes,</p> <p>Gevaudan,</p> <p>Velay,</p> <p>Vivaraix,</p> <p>Viennois,</p> <p>Valentinois,</p> <p>Tricastin,</p> <p>Griffaudan,</p> <p>Diois,</p> <p>Baronies,</p> <p>Embrunois,</p> <p>Gapenfois,</p> <p>Brianfonnois,</p> <p>Higher,</p> <p>Lower,</p> <p>Montlimar.</p> <p>St. Pol Trous chaux.</p> <p>Grenoble.</p> <p>Die.</p> <p>le Butz.</p> <p>Embrun.</p> <p>Gap.</p> <p>Briançon.</p> <p>Arles.</p> <p>Tarascon.</p> <p>Marseille.</p> <p>Toulon.</p> <p>St. Tropez.</p> <p>Frejus.</p> <p>Antibes.</p> <p>Crace.</p> <p>Vence.</p> <p>Aix.</p> <p>Salon.</p> <p>Ap.</p> <p>Folettaquier.</p> <p>Ricli.</p> <p>Draguignan.</p> <p>Sisteron.</p> <p>Digne.</p> <p>Seice.</p> <p>Glaudeve.</p>	<p>St. Jean of Angely.</p> <p>Brouge.</p> <p>Bourdeaux.</p> <p>Blaye.</p> <p>Perigueux.</p> <p>Bergerac.</p> <p>Sarat.</p> <p>Agén.</p> <p>Toncin.</p> <p>Limoges.</p> <p>Brive.</p> <p>Fulle.</p> <p>Cahors.</p> <p>Monalbon.</p> <p>Figeac.</p> <p>Rhodéz.</p> <p>Ville Franche of Rovergue.</p> <p>Valbres.</p> <p>Baz.</p> <p>St. Foy.</p> <p>Dax.</p> <p>Ayre.</p> <p>St. Sever.</p> <p>Nérac.</p> <p>Condom.</p> <p>Aux.</p> <p>Lecloure.</p> <p>St. Bertrand.</p> <p>Lombes.</p> <p>St. Lier.</p> <p>Tarbes.</p> <p>Pau.</p> <p>Leizar.</p> <p>Oleron.</p> <p>Ortes.</p> <p>St. Palais.</p> <p>Bayonne.</p> <p>Toulous.</p> <p>Montauban.</p> <p>la Vaur.</p> <p>Alby.</p> <p>Cahors.</p> <p>Cathinaud darry.</p> <p>St. Papoul.</p> <p>Foix.</p> <p>Pamies.</p> <p>Mirepoix.</p> <p>Rieux.</p> <p>Narbonne.</p> <p>Alath.</p> <p>Limouth.</p> <p>Carcassonne.</p> <p>St. Pons de Tomieres.</p> <p>Beziers.</p> <p>Agde.</p> <p>Pézenas.</p> <p>Lodève.</p> <p>Monpellier.</p> <p>Nismes.</p> <p>Beaucaire.</p> <p>Alquimortes.</p> <p>Mende.</p> <p>Merveich.</p> <p>le Puy.</p> <p>Viviers.</p> <p>le Pond St. Elprit.</p> <p>Uzes.</p> <p>Vienna.</p> <p>Valence.</p> <p>Romans.</p> <p>St. Marcelin.</p> <p>Crest.</p> <p>Montlimar.</p> <p>St. Pol Trous chaux.</p> <p>Grenoble.</p> <p>Die.</p> <p>le Butz.</p> <p>Embrun.</p> <p>Gap.</p> <p>Briançon.</p> <p>Arles.</p> <p>Tarascon.</p> <p>Marseille.</p> <p>Toulon.</p> <p>St. Tropez.</p> <p>Frejus.</p> <p>Antibes.</p> <p>Crace.</p> <p>Vence.</p> <p>Aix.</p> <p>Salon.</p> <p>Ap.</p> <p>Folettaquier.</p> <p>Ricli.</p> <p>Draguignan.</p> <p>Sisteron.</p> <p>Digne.</p> <p>Seice.</p> <p>Glaudeve.</p>
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Estates.

Estates, &c. belonging to the French King.

Estates,
Counties,
Bishopricks,
Cities, &c.
taken and
purchased
by (and in
the Protec-
tion,
Guard, and
Possession
of) the
King of
FRANCE,
viz.,

In the Estates
of the CA-
THOLICK
KING, to
wit,

In SPAIN, as

In the LOW COUNTRY, as

In the FRENCH COUNTRY, as

In the Estate of LORRAIN, as

About LORRAIN, as

In divers Lands
and Princi-
palities, the
most part of
which are e-
steemed in
the Empire
of GERMA-
NY, to wit,

In and about the PALATINATE
of the RHINE, as

In ALSACE, or ALSATIA, as

About ALSACE, as

In the Estates of the Duke of
SAVOY, to wit,

In ITALY,

In the Estates of MONFERRAT,
viz.

On the River of GENE S,

The County of Rouffillon;
where are
The County of Cerdagne, —

The Principality of Catalogne,
and County of Barcelone;
where are

Part of the County of Flanders,

Part of the County of Artois,

Part of the County of Haynaut,

Part of the Duchy of Luxem-
bourg,

Part of the Balliages of Gray,

Part of the Balliages of Salins,

The Duchy of Barrois,

The Duchy of Lorrain,

The Bishoprick of Metz,

The Principality of —

The Principality of Arches, or

The County of —

Part of the Palatinate of the
Rhine,

Part of the Archbishoprick of
Mayence,

Part of the Bishoprick of Wormes,

Part of the Bishoprick of Spire,

Part of the Estate of Bade,

Low Alsace,

Higher Alsace,

County of Pfirt, or Ferrette,
and Country of Sungou,

The County of —

The Bishoprick of Basse,

The County of Reinfield,

In the Duchy of Wirtemberg,
In Piedmont, —

In the Principality of Pied-
mont, —

In the Marquisate of Saluces,

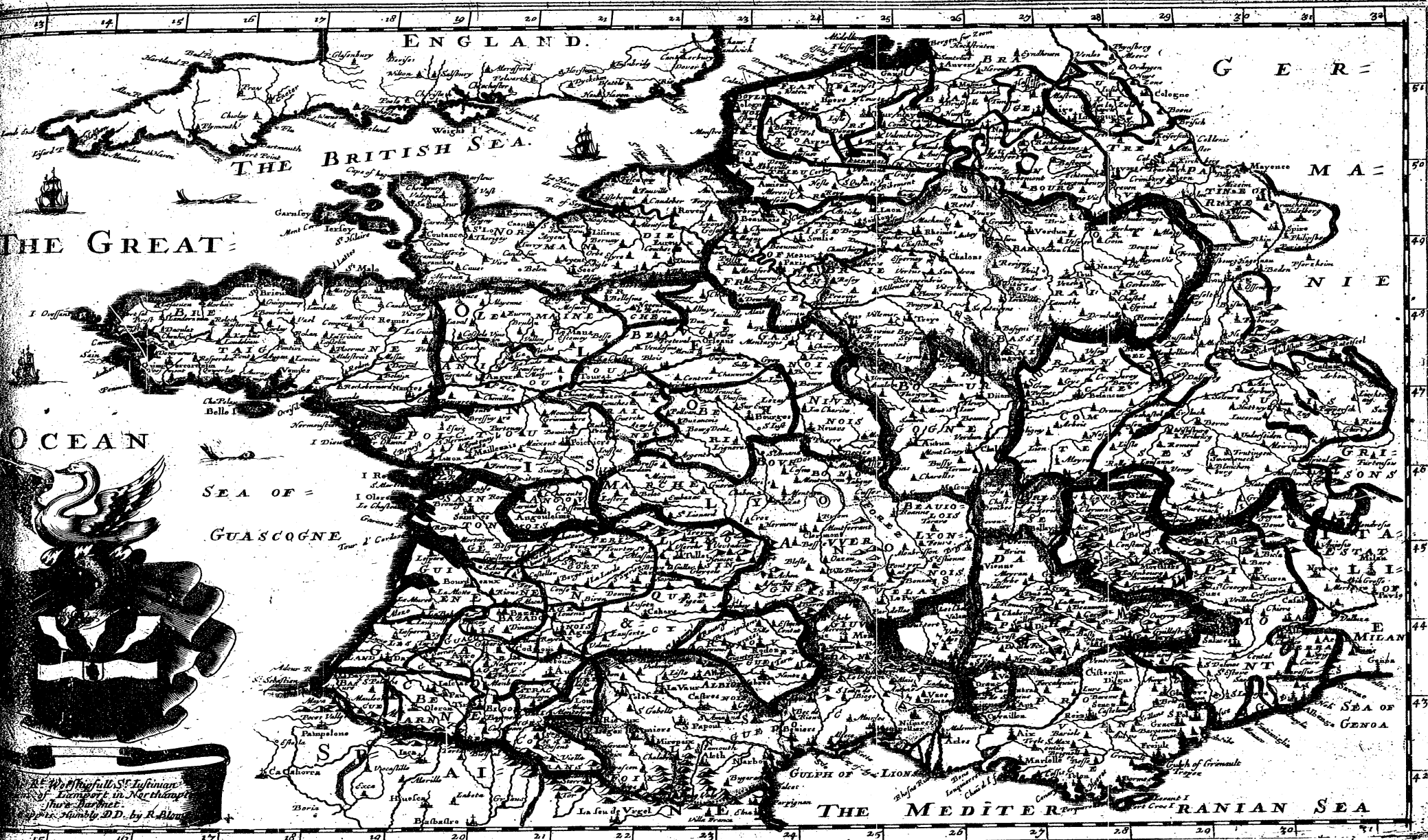
In the Dukedom of Savoy, —

In the Dukedom of Mantoua,

The Principality of —

Perpignan,
Elne,
Collioure,
Salces, &c.
Ruy, Cerda, &c.
Barcelona,
Girona,
Vich,
Solsona,
Urgel,
Manresa,
Cardona,
Cadeques, &c.
Gravelines,
Watten.
Arras,
Heldin,
Bappaumes.
Landrochy.
Thionville.
Damvillars.
Vesoul,
Lure, &c.
Arbois,
Poligny,
Bletterans,
St. Amour,
Joux, &c.
Barle Duc,
Ligny,
St. Michael,
Pont a Moisson.
Nancy,
Mirecourt,
Newchastel on the Meuse,
Dieuze,
Sirke, &c.
Vic,
Moyen-Vie,
Marial,
St. Avold,
Alberstros,
Epemay,
Sedan.
Charleville,
Clermont,
Stenay,
Jamez,
Biche.
Bacharach,
Creutznach,
Alzheim,
Oppenheim,
Neustat,
Landau.
Germersheim, &c.
Mayence,
Bingen, &c.
Wormes.
Spire,
Udenheim, or Philipsbourg,
Baden,
Durlach,
Pfortzheim, &c.
Haguenau,
Saverne, &c.
Colmar,
Schlestat,
Brissach,
Newbourg, &c.
Ferrette,
Tannes,
Befort,
Blome,
Landseron, &c.
Monbeliard, &c.
Porentru,
St. U. sand,
Dalsperg, or Delmont, &c.
Reinfield,
Lansfenbourg,
Waldshout,
Hohen-Wiel,
Fignerol, &c.
Turig,
Suze,
Avigliane,
Chivas,
Santja,
Alt,
Quierascq,
Coni,
Caours, &c.
Carmagnole,
Demont,
Trin, &c.
Cafal,
Aqui.
Monaco, or Morgues.

FRANCE.



GENERAL MAP of the KINGDOM of FRANCE. Designed by Monsieur Sanlon, Geographer to the French King.

FRANCE.

FRANCE is esteemed the most fertile and powerful Kingdom in Europe, and the best, next to England, that can subsist without the help of others. It is seated about the 45th degrees of Latitude, which is in the midst of the Temperate Zone. It is washed on the East with the Rhine, together with an imaginary line drawn from Strasburgh to Calais; on the South by the Mediterranean Seas, and opens a passage to the Northern Ocean; on the West by the Aquitain Sea; and on the North by the British Ocean. It extends it self from the 42 degrees of Latitude unto the 51, and from the 15th of Longitude to the 29th, which makes its length and breadth to be above 200 French Leagues. It is contiguous to the Low Countries on the North, to Germany and Italy on the East, and to Spain on the South.

It is of an extraordinary fertile Soil, affording three excellent and useful Commodities in great plenty, viz. Corn, Wine, and Salt; also Oil, Almonds, Paper, Canvass, Linnen, both fine and coarse, Oade, Corral, Skins, Nuts, Stuffs, and several Manufactures, Toies, and Curiosities. It is very plentiful in all Provisions.

It is exceeding populous and crouded with Towns and Cities, once numbering 100000 Parishes, which are now reduced to a less number. The People are well proportionate, and indifferent handfom, especially the Men; they are of a ready and Mercurial wit, of a courteous Behaviour, of a hot Brain, and soon moved to Broils; they are very active, and given to Exercises; in weighty Affairs, both Civil and Martial, they are not over subtle, their first attempt being like thunder, and their end like smoke. In matters of Religion they generally follow the Church of Rome, in which they are not over strict.

It would be too tedious to observe all the different Orders and Governments in this Kingdom; we will content our selves to say, that in the Assemblies of the General Estates, where the Nobility, Clergy, and third Estate, have their Seats, it is divided into twelve several Governments, of which four are on this side, or if you please, Northwards of the Loire; four upon and about the Loire, and four beyond the South of the Loire.

The four on this side are Picardy, Normandy, the Isle of France, and Champagne; the four about the Loire are Bretagne, Orleance, or Orlenois, Bourgogne, or Burgundy, and Lionois; and the four beyond the Loire are Guienne and Gascoigne, Dauphin, and Provence. In each Government are several Parts or Countries, which are taken notice of in the Geographical Tables of the Kingdom, of which in order.

PICARDT is divided into the Higher and Lower, in both of which are divers good Towns; in the Lower are 1. Calais, called by Caesar, Portus Icius, held by the English near 200 years, and was then esteemed the Key of the Kingdom; it is esteemed one of the best Ports in Picardy, seated opposite to Dover in England, from which it is distant about eight Leagues, once a place of great Trade, as being the Staple of English Wools; now only of note for its being the receipt of Passengers from this Kingdom to England, to

H

and

Its Situation.

Its Bounds.

Its Soil and Commodities.

Its People.

Government of Picardy.

and fro. 2. *Bulloigne*, a strong Frontier Town, towards the Sea. 3. *Abbeville*, also a strong Frontier Town. In the higher *Picardy* are, 1. *Amiens*, a Frontier City towards *Flanders*, well fortified, and famous for the sudden loss, and as sudden and brave regaining it by *Henry the Fourth*. 2. *St. Quentin*, a strong Frontier Town.

NORMANDY, well watered with *Rivers*, amongst which are the *Seine*, *Anon*, and *Orne*. It is well garnished with *Cities* and *Towns*, many of which are commodiously seated for Trade, by reason of their vicinity to the *British Ocean*; the chief of which are, 1. *Rouen*, its Metropolis, seated in the higher *Normandy*, on the banks of the *Seine*, over which there is a famous Bridge of *Boats*. Here is held one of the *Parliaments* of *France*, and it is a place of as great Trade as any in *France*, being one of the three principal *Towns*, where *Exchanges* are used. Here the *English* have a publick Hall allowed them for the sale of *English Woolen-cloth*, to which place at certain days they are constrained to expose them to sale. 2. *Havre de Grace*, or *New Haven*, the strongest place in all *Normandy*. 3. *Dieppe*, also a City of some Trade, being a common Landing-place for the *English* in their passage into *France*. 4. *Caen*, famous for its long resistance of *Henry the Fifth* of *England*. 5. *Balais*, once a strong Town; here it was that Duke *Robert* passing through saw some Maids dancing, amongst which was one *Arel*, a Skinner's Daughter, who so nimbly footed it, that his desires were to enjoy her, thinking she would be as active in the Bed; whereupon he sent for her, and obtained his desires; in which she so pleased him, that he begat on her *William* the Bastard King of *England*, in spite to whom, and disgrace to his Mother, the *English* call Whores, Harlots. 6. *Charenton*, famous for the Preaching of that eminent Divine *Peter du Moulin*; and 7. *Constance*.

The *Ile of FRANCE*, made so by the circlings and confluences of the *Seine* and other little *Brooks*: It lieth in the heart of all *France*, where we shall find not only its particular glory, but that of all the Kingdom, to wit, *Paris*, which for its *Riches*, *Power* and *number* of *Inhabitants*, may justly contend with any in *Europe*. It is about 12 miles in circuit, if all the *Suburbs* are reckoned, and in form rather round than oval; seated on the *Seine*, and in a Soil so fertile, that not many *Cities* know so great plenty. It is of no great strength, nor of much consequence in matter of Trade, only contenting themselves with enough to serve the *Inhabitants* and Court; yet in matter of *Coin* it giveth rule to all *Cities* in *France*, and is another of the three *Cities* where *Exchanges* are placed; a convenience for the *Nobility*, *Gentry*, and *Courtiers*, as also for *Strangers*. The chief ornaments of it are the Palace of the *Louvre*, so much famous abroad; besides so many *Palaces* of the *Nobility*, amongst the rest that of *Luxembourg*, its *Palace-Royal*, its Church of *Notre Dame*, its *University*, formed by *Charlemain* in *Anno 800*, esteemed the first in *Europe*, containing 55 *Colleges*, and particularly the *Colledge* of the *Sorbona*; also the Halls of *Justice*, or Courts of *Parliament*, being as our Courts of *Judicature*, are all remarkable. Next to this City may be reckoned, 1. *St. Dennis*, about three miles from *Paris*, famous for the Sepulchres of the *French Kings*. 2. *Pont-ysse*; 3. *Meaux*; 4. *Beauvais*, and 5. *Soissons*. In this Province is the beautiful House and Forest of *Fontaine Bleau*, built by *Henry the Fourth*, esteemed not only one of the fairest Palaces in all *France*, but of *Christendom*; here is also seated the Royal Mansion of *St. Germain* and *Boys de Vincennes*, where the puissant *Henry the Fifth* finished his days. In this Province is the Dukedom of *Valois*, whose chief places are *Luzarch* and *Sen-lis*: This Country abounds in *Vineyards*, which yields the sharp Wine called *Vin de Paris*.

CHAMPAIGNE, so called from being a *Champaign Country*; its chief places are, 1. *Rheims*, famous for being the place where the *Kings of France* are usually Crowned, and anointed with an Oil here kept, which they say

came

came down from Heaven, and never decreaseth; and here is a Colledge for *English Jesuits*. 2. *Chalons*, 3. *Langres*, 4. *Sens*, and 5. *Troyes*, all places of some account.

BRETAGNE, or *Britanny*, whose chief Port-Towns are *Brest*, *Blavet*, and *St. Malo*; and within Land the *Cities* of 1. *Nantes*, seated on the *Loire*. 2. *Rennes*, where the *Parliament* for this Province is held. 3. *Vannes*, seated on the South-Sea. 4. *Breine*; and 5. *Morlaix*, of note for its great store of Paper so called.

Under the Government of **ORLEANS**, or **ORLEANOIS**, we comprehend divers *Provinces* on this side, upon, and beyond the *Loire*, viz.

MAINE, whose chief places are, 1. *Maine*, seated on the River *Magenne*, which dischargeth it self into the *Loire*: 2. *Mayenne*, 3. *Laval*, and 4. *Domfront*.

PERCHE, on the borders of *Normandy*, hath for its chief places *Neuf le Retrou*, *Mortaigne*, and *Verneuil*; which by some are esteemed in *Normandy*.

LA BEAUCE hath for its principal places, 1. *Chartes*, seated on the *Loire*, a fair and pleasant City, dignified with an *University* for the study of the Civil Laws. 2. *Estampes*, 3. *Chateau Dun*, and 4. *Vendosme*.

GASTENOIS hath for its principal place *Montargis*.

NIVERNIS, or **BURBON**, well watered by the *Loire* and *Allier*; its chief places are, 1. *Nerves*, of some account for its pretty *Glas-works*, and is dignified with an ancient Dukedom. 2. *La Charite*, 3. *Clamecy*, and 4. *Dongy*.

ORLEANOIS, whose chief City is *Orleans*, from whence the Government or Province took its name; a City, if *Paris* excepted, may contend with any in *France*, having once been the Seat of a King of its own. Its pleasant situation on the *Loire* makes it extream delightful, and although of no considerable Trade, yet is a great Thorough-fair for such Commodities as pass to *Lions*, and other places in the heart of the Kingdom.

BLASOIS hath for its chief place *Blois*, where, by the command of *Henry the Third*, the Duke of *Guise*, the first stirrer up of the Civil Wars in *France*, as also the great contriver and promoter of the grievous Massacre at *Paris*, was slain in the *Senate-house*.

TOURAIN hath for its chief places, 1. *Tours*, where the *Protestants* first began, and from one of whose Gates (called *Hugo's Gate*) they were called *Hugonots*. Nigh to this place it was that *Charles Martel*, Father of King *Pepin*, discomfited an Army of about 400000 *Saracens*, and slew of them about 370000. 2. *Amboise*, 3. *Loches*, and 4. *Chinon*.

ANJOU, adjoining to *Maine*, a small Province, but exceeding fertile, and affords the best *Wines* in *France*. Its chief places are 1. *Angiers*, dignified with an *University*. 2. *Saumur*, a Town delightfully seated on the *Loire*, and dignified with the only *Protestant University* in *France*: and 3. *la Fleche*.

POICTOU, a large and populous Province, numbring about 1200 *Parishes*, and dignified with three *Bishopricks*; its principal places are 1. *Poitiers*, seated on the River *Clavien*, famous for the study of the Civil Laws, and in greatness esteemed next to *Paris*; but of small account as to matter of Trade. 2. *Maillezais*, 3. *Lusson*, 4. *Chastelleroud*, 5. *Niort*, 6. *Lusignan*, and 7. *Touars*. This Country is very fertile, especially in good *Vineyards*; and in these Fields were fought that memorable Battle, between *John of France* and *Edward the Black Prince*, who contrary to all expectation gained the day.

AUNIS, South of *Poitou*, hath for its chief City *Rochel*, commodiously seated on the *Aquitain Ocean*, by reason of which it enjoyeth a great Trade; it is a place of great strength, as may appear by the resistance the *Protestants* there inhabiting, made against the powerful Army of the *French King*.

H 2

A N-

Province of
Angoumois.Province of
Berry.Province or
Duchy of
Burgundy.Several small
Countries.Province of
Lionnois.Province of
Auvergne.Government
of Guienne and
Gasconne.Provinces in
Gasconne.Province of
Languedoc.

ANGOU MOIS, South of *Guienne*, hath for its chief place *Angoulême*.

BERT, very fertile and hath rich Pastures, on which are fed abundance of *Sheep*, of whose *Wool* the Inhabitants make store of *Cloth*. Its chief places are 1. *Burges*, dignified with a flourishing *University*; 2. *Iffoudun*; 3. *Chasteau Roux*; 4. *Argentum*, and 5. *Sancerre*.

BOURGOGNE, or **BURGUNDY**, which is subdivided into several less parts, hath for its chief places 1. *Dijon*, built by the Emperor *Aurelian*, proud in her *Parliament*, and for giving birth to *St. Bernard*. 2. *Autun*, once the chief City in the Province, and dignified with an *Episcopal See*. 3. *Beaune*, famous for its stately *Hospital*, equalizing many Princes Palaces; and these places are in *Bourgogne*, particularly so called. 4. *Challon*, in *Challonnais*, belonging to the House of *Orange*. 5. *Mascon*, in *Masconnois*, where the *Devil* made his visits and disputes to a *Minister*, which story is sufficiently known, being at large treated of in a Book entitled the *Devil of Mascon*. 6. *Semur*, in *Auxois*; and 7. *Chastillon* on the *Seine*, in the Country of *Montagne*.

Adjacent to this Province of *Burgundy* are the Countries of *Charollois*, *Auxerrois*, *Bresse*, *Balliage*, *Beugey*, and *Veromey*. The chief place of *CHAROLLOIS*, is *Chorolles*; of *AUXERROIS*, *Auxerre*; of *BRESSE*, *Bourge*, a Town so well built and so strongly fortified, that it is esteemed impregnable; of *BALLIAGE*, which bordereth upon the *Swisses* and *Savoy*, *Gex*, which is not far distant from *Geneve*; and of *BUGET* and *VEROMAT*, bordering upon *Dolphin* and *Savoy*; *Belly*, which is a place of some account.

LIONNOIS hath for its chief places, 1. *Lions*, seated upon the conjunction of the *Roane* with the *Soane*, by some esteemed the second City of *France*, a famous ancient Mart Town, and the See of an *Archbishop*, who is Primate of all *France*. 2. *Treveux*, in the Sovereignty of *Dombes*; *Mombizon*, in the County of *Forez*; and 4. *Ville Franche*, in the Country of *Beaujolais*.

AUVERGNE hath for its chief places, 1. *Bourbon* the *Archambaul*; 2. *Molins*, seated on the *Elaver*, of note for their neat Cafes of *Knives* and *Scissors*, both in the part, or Country of *Bourbonnois*. 3. *St. Pierre le Montier*, in *Neversois*; 4. *Clermont*, the Seat of *Vercingetorix*, who so bravely opposed *Cesar*; 5. *Riom*, 6. *Monferrand*, 7. *Vic le Comte*, and 8. *St. Flour*, all in *Auvergne*, particularly so called. 9. *Gueret*, and 10. *Dorat*, in the Part of *La Marche*.

In the Government of *Guienne* and *Gasconne* are several Provinces and Countries, in which are seated many good Towns and Cities.

In **GUYENNE** are 1. the Province of *Saintonge*, whose chief place is *Saintes*. 2. *Guienne*, which hath for its principal City *Bordeaux*, seated on the Banks of the *Gerende*, famous for being the Birth-place of King *Richard* the Second, at present honoured with an *University* and a *Parliament*. It is a place of a very great Trade, and plentifully furnished with divers good Commodities, especially *Wines* and *Paper*. 3. *Perigori*, hath for its chief place *Perigueux*, seated on the Banks of *Ila*; 4. *Agenois*, whose chief place is *Agen*; 5. *Limosin* hath for its chief places *Limoges* and *Brive*; 6. *Quercy*, in which are seated *Cahors*, a rich and beautiful City, built on the ascent of a Hill; and *Montalbon*, situate on the *Garond*, a place of good strength; and 7. *Rovergue*, whose chief places are *Rodez* and *Vabres*.

In **GASCOGNE** are also divers Provinces, which with its chief places are taken notice of in the *Geographical Table* of the four Governments beyond the *Loire*, beginning with *Guienne* and *Gasconne*.

LANGUEDOC may be divided into three quarters, in which are several parts. In the higher *Languedoc* are the Cities of *Toulousa*, in *Toulousan*, a fair large City, though of no continuance, and is a place of a considerable

Inland-

Inland-trade. 2. *Alby*, in *Albigeois*; 3. *Castellan darry*, in *Auvagnais*; and 4. *Foix*, in *Foix*. In the lower *Languedoc* are 1. *Narbonne*, the first Colony planted by the *Romans* next to *Carthage*, out of *Italy*; 2. *Aleth*, 3. *Li-mouth*, all in *Narbonne*; 4. *Beziers*, 5. *Agde*, and 6. *Pemenas*, in the quarter of *Beziers*, 7. *Montpellier*, esteemed the healthfullest place for a pure Air in all *France*; 8. *Nismes*, and 9. *Beaucaire*; all in the quarter of *Nismes*. In the other part called *Sevennes* are, 1. *Mende*, in the quarter of *Gevaudan*; 2. *Le Puy*, in *Velay*; 3. *Viviers*, and 4. *Uzes*, in the part of *Vivara-is*.

The Province of **DAULPHINE** is watered with the *Roane* and other Rivers, and honoured with the title of the Princes of *France*. It may be divided into three great parts, which are subdivided into others, viz. in the part or quarter towards the *Roane* are the Parts and Cities of *Vienne* in *Viennois*, of some esteem for its excellent *Sword-blades* here made; 2. *Valence*, a fine City watered with the *Roane*; 3. *Romans*, 4. *St. Marcellin*, 5. *Crest*, and 6. *Montelimar*; all in the higher and lower *Valentinois*; and *St. Pol Trois Chaux*, in the part of *Tricastin*. In the quarter in the midst of the Province are 1. *Grenoble*, in *Grisonauden*; 2. *Die*, in *Diois*; and 3. *le Bujiz*, in *Baronies*: And in the quarter towards the *Alpes*, 1. *Embrun*, in *Embrunois*, 2. *Gap*, in *Gapenfois*, and 3. *Briançon*, in *Briançonnois*.

PROVENCE, washed by the *Mediterranean Sea*, hath for its chief places towards the *Roane*, *Arles*, a Town well fortified by *Henry* the Fourth; and *Tarascon*. Upon the Sea, 1. *Marseille*, once a Colony of the *Phanicians*, commodiously seated on the *Mediterranean* shoar, enjoying an excellent Haven and Road for Shipping, which renders it a place of a considerable Trade, and is well frequented by Merchants. 2. *Tholon*, the best Sea-port Town on the *Mediterranean* in all *France*, having a capacious and safe Haven, and is well resorted unto by Merchants. 3. *St. Tropes*; 4. *Grace*, and 5. *Vence*. In the midst of the Province are 1. *Aix*, honoured with a *Parliament*; 2. *Salon*, 3. *Apt*, and 4. *Riez*: And towards the *Alpes* are *Sisteron*, *Digne*, *Senes*, *Glandeeve*, &c.

To the Province of **PROVENCE** doth belong the Country of *Avignon*, and the Principality of *Orange*: In *Avignon* are many walled Towns and some Cities, the chief of which is *Avignon*, a fair City seated on the *Roane*, famous for being the ancient Seat of the *Popes*, till removed to *Rome*. This City is worthy of observation, in that here is said to be 7 *Parish Churches*, 7 *Monasteries*, 7 *Nunneries*, 7 *Inns*, 7 *Palaces*, and 7 *Gates* to its Walls; as also for being made a *University*.

In **ORANGE** are several good Towns and Cities, the chief of which is *Orange*, seated on the *Meine*, of note for the wonderful and excellent Antiquities that are here to be seen; and this Country belongs to the Prince of *Orange*.

To the twelve Governments we ought to add **LORRAINE**, where are the Cities of *St. Michael*, *Metz*, *Toul*, *Verdun*, and *Nancy*: also part of *Artois*; of *Hainault* and *Luxembourg*, where are the Cities of *Arras*, *Avesnes*, *Moutmedy*, &c. Likewise the Principalities of *Sedan* and *Arches*, whose chief place is *Charleville*; also *Roussillon*, on the Coast of *Spain*, whose chief places are *Perpignan*, *Elne*, *Collioure*, *Salces*, &c. *Alsacia*, on the side of *Germany*, and the Principality of *Bress*, belonging to *Mademoiselle d'Orléance*; but being to treat of these places in *Germany*, and elsewhere, I shall omit the description of them here.

All *France* hath 15 *Archbishops*, 105 *Bishops*, 10 *Parliaments*; amongst which the power of that of *Paris* extends as far as all the rest. Under these *Parliaments* are 105 and odd *Balliages*, or *Justices-Royal*, immediate dependants on these *Parliaments*, 24 *Generalities*, and about 250 *Elections* and Receipts of *Royal-Money*: And in the general Governments of the *Militia*, about 2 or 300 *Governments*.

This Kingdom is for the generality exceedingly furnished with *Rivers*, the principal amongst which are the *Loire*, *Roane*, *Garonne*, and *Seine*.

ALLÉ.

Province of
Dauphine.Province of
Provence.Principality
of Orange.Bishops, Parli-
aments, &c. in
France.

Chief Rivers.

ALLE-MAGNIA, or GER-MANY, which may be considered in three great Parts, whereof

The first about the RHINE, may be subdivided into three other parts, to wit,	On this side the RHINE; where are	The French County, Lorraine, ———	Belfort, Dole, Metz, Nancy, Anvers, or Antwerp, Bruffelle, Gaad, or Gaunt, Lille, Arras, Strasbourg, Fribourg, Biffac, Haguenau, Hildeberg, Wormes, Spire, Mayence, Treves, Cologne, Duffeldrop, Wefel, Juliers, Amsterdam, Utrecht, the Higue, Wirzburg, Nuremberg, Francfort, Caffel, Marburg, Munster, Embden, Soest, Basse, Berne, Zurich, Geneva, Coire, Aushourg, Constance, Ulme, Lindau, Sturgard, Inpruck, Feldkirch, Munick, Landhout, Ratibone, Salsbourg, Paffau, Amberg, Vienne, Lintz, Crems, Crezce, St. Veit, Lau-bach, Cilley, Metling, Prague, Cottenberg, Pifen, Coningraz, Budweis, Glaz, Breslau, Lignitz, Neiffe, Gros Glogau, Baudiffeu, Gorlitz, Soraw, Olmutz, Rynus, Wittenberg, Drefde, Lipfick, Erford, Stendal, Brandenburg, Berlin, Landfperg, Stettin, Straelfond, Magdebourg, Brene, Perden, Hildeheim, Halberftat, Kille, Gluckftad, Roftock, Suerin, Lauenbourg, Lutenbourg, Brunfwick, Wolfenbuttel, Lubbeck, Hambourg, Gotha.
	Upon the RHINE; where are	The Catholick Low Countries, ———	
	Beyond the RHINE; where are	Alface, or Alfatia, ———	
The second about the DANUBE, may be also divided into three other parts, to wit,	Higher, or SOVABIA; which is divided into	Palatinate of the Rhine, ———	
	Mean, or BAVARIA; which is divided into	The Electorates of ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	The Estates of Cleves and Juliers, ———	
The third about the ELBE, and ODER, may be divided into two parts, to wit,	Higher, or SOVABIA; which is divided into	The Estates of the United Provinces, ———	
	Mean, or BAVARIA; which is divided into	Franconia, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	Hefie, ———	
The Highest comprehendeth the Estates of BOHEMIA; where are the	Higher, or SOVABIA; which is divided into	Westphalie, ———	
	Mean, or BAVARIA; which is divided into	Suiffe, or Switzerland, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	Sovabia, ———	
The Lowest comprehendeth SAXONY in general, which may be divided into the	Higher, or SOVABIA; which is divided into	Tirol, ———	
	Mean, or BAVARIA; which is divided into	Dutchy of Bavaria, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	Palatinate of Bavaria, ———	
The Highest comprehendeth the Estates of BOHEMIA; where are the	Higher, or SOVABIA; which is divided into	The Archbifhoprick of Auftria, ———	
	Mean, or BAVARIA; which is divided into	The Hereditary Lands of Auftria, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	Kingdom of Bohemia, ———	
The Lowest comprehendeth SAXONY in general, which may be divided into the	Higher, or SOVABIA; which is divided into	Provinces incorporated to Bohemia, as ———	
	Mean, or BAVARIA; which is divided into	The Estates of Saxony, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	The Marquisate of Brandenburg, ———	
The Highest comprehendeth the Estates of BOHEMIA; where are the	Higher, or SOVABIA; which is divided into	Pomerania, ———	
	Mean, or BAVARIA; which is divided into	Two Archbifhopricks, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are	Three Bifhopricks, ———	
The Lowest comprehendeth SAXONY in general, which may be divided into the	Higher, or SOVABIA; which is divided into	Several Dutchies, among which are those of ———	
	Mean, or BAVARIA; which is divided into	Imperial Cities, ———	
	Lower, or AUSTRICHE or AUSTRIA; where are		

GER

GERMANY about the Rhine, may be considered

On this side the RHINE, in three Parts, to wit,	FRANCHE COUNTRY, or BURGUNDY; where are	The Balliages of ———	Amont, Dole, Arai, ———	Gray, Dole, Salins, ———
	LORRRAINE; where are the Dutchies, &c. of	BARROIS, ———	And some Mannors of the Empire, as ———	Belfort, Monbéliard, Bar-le-Duc, St. Michael, Nancy, Vaudrevange, Mirécourt, ———
	The CATHOLICK Low Country; where are	LORRRAINE, where are the Balliages of ———	The Archbifhoprick, and City of the County of Alsace, ———	Metz, Toul, Verdun, ———
On this side the RHINE, in three Parts, to wit,	ALSA CE, or ALSATIA, ———	The Dutchies of ———	Brabant, ———	Louvain, Bruffelles, ———
	The PALATINATE of the Rhine, under the name of which may be understood	Luxembourg, ———	Limbourg, ———	Luxembourg, Rhonville, Gand, or Gaunt, ———
	The ELEC-TORATES Ecclesiasticks, or	Flanders, ———	Artois, ———	Brugge, Lille, ———
Upon the RHINE, in five Parts, viz.	The Estates of the Empire, as	The Counties or Earldoms of ———	Haynab, ———	Arras, St. Omer, Mons, Valenciennes, ———
	The Marquisate of the Empire, ———	The Marquisate of the Empire, ———	The Marquisate of the Empire, ———	Anvers, or Antwerp, ———
	The Bifhoprick, and Imperial City of ———	The Marquisate of the Empire, ———	The Marquisate of the Empire, ———	Cambray, Liege, ———
Beyond the RHINE, in three Parts, to wit,	ALSA CE, or ALSATIA, ———	The Sungou, ———	The Higher Alface, ———	Altkirck, ———
	The PALATINATE of the Rhine, under the name of which may be understood	The Lower Alface, ———	The Brifgou, ———	Strasbourg, Haguenay, Fribourg, Biffac, ———
	The ELEC-TORATES Ecclesiasticks, or	The Marquisate of ———	The Marquisate of ———	Baden, Durlach, Heidelberg, Frankendal, Zweibruck, Simmeren, ———
Beyond the RHINE, in three Parts, to wit,	The Estates of the Empire, as	The Estates of the Palatinate, ———	The Estates of the Princes of the House Palatinate, ———	Wormes, ———
	The Marquisate of the Empire, ———	The Bifhopricks and Imperial Cities of ———	The Bifhopricks and Imperial Cities of ———	Mayence, Achatenbourg, Treves, Coblenz, Cologne, Bonne, ———
	The Bifhoprick, and Imperial City of ———	The Bifhoprick, and Imperial City of ———	The Bifhoprick, and Imperial City of ———	Wefel, ———
Beyond the RHINE, in three Parts, to wit,	FRANCO-NIA; where are	The Dutchy of ———	The Dutchy of ———	Guelders, ———
	HESSE, or HESSIA, as it is divided into	The Counties of ———	The Counties of ———	Holland, ———
	WESTPHALIA; where are	The Signiories of ———	The Signiories of ———	Zeland, Zutphen, West Friesland, Groningue, Utrecht, Over-Yfel, ———
Beyond the RHINE, in three Parts, to wit,	FRANCO-NIA; where are	And part of the Dutchy of Brabant, ———	And part of the Dutchy of Brabant, ———	Boftedue, ———
	HESSE, or HESSIA, as it is divided into	The Ecclesiasticks, or ———	The Ecclesiasticks, or ———	Wirtzburg, Bamberg, ———
	WESTPHALIA; where are	The Laicks, or ———	The Laicks, or ———	Mergetheim, Cullenbach, Onfack, Weickerheim, Wertheim, Nuremberg, Francfort, Schweinfurt, ———
Beyond the RHINE, in three Parts, to wit,	FRANCO-NIA; where are	The Imperial Cities of ———	The Imperial Cities of ———	Caffel, Marburg, Corbach, Fulde, ———
	HESSE, or HESSIA, as it is divided into	The Imperial Cities of ———	The Imperial Cities of ———	Naffau, Solins, ———
	WESTPHALIA; where are	The Imperial Cities of ———	The Imperial Cities of ———	Hagen, Hengbourg, Munster, Paderborne, Minde, ———
Beyond the RHINE, in three Parts, to wit,	FRANCO-NIA; where are	The Imperial Cities of ———	The Imperial Cities of ———	Arenberg, Aurick, Oldenbourg, Nienbourg, Lippel, Ravensberg, Bentheim, ———
	HESSE, or HESSIA, as it is divided into	The Imperial Cities of ———	The Imperial Cities of ———	Emden, ———
	WESTPHALIA; where are	The Imperial Cities of ———	The Imperial Cities of ———	Zouft, ———

The

The Countries, which consisteth of Seventeen Provinces, to wit, of

Four Duchies, to wit	BRABANT; where are the Quarters of	Louvain, Brussels, Anvers, Bosleduc,	Louvain, Tillemont, Afcot, Brussels, Nivelles, Breda, Berg op Zom, Lire, Saint Ulric, Bosleduc, Grave, Limbourg, Vic de Mastric, Fauquemont, Dalem, Rolduc, Luxembourg, Thionville, Arlon, Balkoigne, Monmedi, Dam Villers, Nieumegue, Bommel, Fort de Schenck, Arnhem, Harderwick, Ruremonde, Gueldres, Venlo, Stefanwerdt, Gand, or Gaunt, Bruges, Ipre, Gravelines, Dunkirk, Ostend, Newport, Seluce, Lille, Douay, Tournay, Orchies, Alost, Hulst, Axel, Arras, Heldinfert, Bappaumes, St. Pol, St. Omer, Aire, Bethune, Mons, Valenciennes, Maubeuge, Avesnes, Landrechies, Philippeville, Mariembourg, Namur, Charlemont, Alemar, Inchuse, Horne, Dort, Delft, Leyde, or Leyden, Harlem, Amsterdam, Goude, Rotterdam, the Hague, the Brill, Mildebourg, Flushing, Ziriczee, Zutphen, Doebourg, Grolle,
	LIMBOURG; where are	Limbourg, Adjacent Lands,	
	LUXEMBOURG,		
	GUELDRÉS, where are four Quarters; but that of ZUTPHEN is among the Counties,	Betuve, Veluwe, Gueldres,	
Seven Counties, viz.	FLANDERS; which is divided in	Flanders Teutonic, Flanders Wallonic, Flanders Imperialic,	
	ARTOIS,	Wallone, Flamingant,	
	HAYNAUT,		
	NAMUR,		
One Marquisate of the Empire, which consisteth but of the City of	HOLLAND; which is divided into	North Holland, South Holland,	
	ZELAND,		
	ZUTPHEN,		
	UTRECHT,		
Five Signieuries, to wit,	OVERYSSEL; where are the Quarters of	Saland, Tuenete, Brente,	
	WEST FRISE, or WEST-FRISELAND,		
	GRONINGUE,		
	MALINES,		
To which may be added the	Archbishoprick and Seignieury of CAMBRAY,		
	Bishoprick and Signieury of LIEGE; where are		
	County of LINGEN,		Lingen.

The ESTATES, or UNITED PROVINCES of the LOW COUNTRIES, possessed

In EUROPE,	Dutchy of	GUEL- DERS,	Quarter of Betuve, Quarter of Veluwe, North Holland, South Holland,	Nieumegue, Bommel, Fort de Schenck, Arnhem, Harderwick, Alemar, Horne, Inchuse, Dordrecht, Harlem, Delft, Leyde, or Leyden, Amsterdam, Goude, Rotterdam, the Hague, the Brill, Gorkum, St. Guiremborg, Mildebourg, Ziriczee, Fleffing, Tolen, Zutphen, Doebourg, Grolle, Utrecht, Deventer, Campen, Swol, Covorden, Lieuvarden, Harlingen, Francker, Dockum, Staveren, Groningue, Wesel, Rees, Emmerick, Goch, Gennep, Rhinsberg, Orfay, Roerort, Bosleduc, Breda, Berg op Zom, Willemsd., Steenberg, Lillo, Maeftrecht, Ecluse, Ardenbourg, Middelbourg, Isendik, Biervliet, Ter-Neufe, Philippe, Patience, Lifkenhoeck.
	Counties of			
	Signieuries of			
	Part of the Dutchy of			
And in the Neighbouring Estates of the LOW COUNTRIES	Part of the Estate of			
	And in the County of			
	Part of the Dutchy of			
	Part of the Dutchy of			
And in the most Southern part of the LOW COUNTRY,	Part of the County of			
In AFRICA, or AFRIQUE,	AFRICA, or LYBIA,	Upon the Coast, or near	The Country of the N.E. GRO'S,	Arguin, Goceve, St. George de la Mine, Fort of Nassau, Cuidad de Pavoan, St. Pol de Loanda,
	ETHIOPIA,	The Isles of	GUINEE,	
	And in the East INDIES,	On the Coasts of	LOANDA,	
	On the Coasts of			
In ASIA,	Part of the MOLUCQUES; to wit, in		COROMANDEL,	Gueldres, Malaca, Colombo, Jacatra, or Batavia, Talouque, Maylaye, Tacoma, Nassau, Taffion, Naffiquia, or Maurice, Tabiffola, or Telebola, Labolia, Gamineduore, Zabou, Coubella, Lovit, Hittou, Ambeyne, Nassau, Belgique, Renege, Zeland.
	And in the East INDIAN ISLES,		MOTIR,	
			MAQUIAM,	
	About the MOLUCQUES; to wit, in		BACHIAN,	
Between CHINA and JAPON,			GILOLO,	
			AMBOYNE,	
			NERA,	
			POLEWAY,	
In AMERICA, or AMERIQUE MERIDIONALE;	Part of BRAZILE; where are the Capit-nies of		HERMOSO,	
	And near the Coast of			
			FERNAMBUCO,	Olinde, Tamaraca, Parayba, Pongli, Ciara, Maragnan, Curacao.
			TAMRACA,	
			PAYABA,	
			RIO GRANDE,	
			CIARA,	
			MARAGNAN,	
			VENEZUELA, the Isle of	

GERMANY about the Danube, may be considered in three Parts, viz.

Higher, or SOVABIA, which is subdivided into two parts, to wit,

SOVABE, or SOVABIA; where are

The Bishopricks of
The Duchy of
The Marquisate of
Part of the Marquisate of
Thirteen Counties, among the which are

Divers Baronies, &c.

Thirty five Cities of the EMPIRE; among the which

Ausbourg,
Constance,
Coire,
Wirttemberg,
Burgau,
Baden Durlach,
Furtenberg,
Hohenberg,
Rhinfeld,
The Barony of,
Beyond the Danube, are
On this side the Danube, are

Thirteen Cantons, where of

SWISSES, or SWITZERLAND; under the name of which is understood

Twelve or Thirteen Allies; among the which are

Twenty, or Twenty five Subjects; among the which are

The principal Cities are

The Abby and City of

The Cities of

The Country of

The Vallée, or the Balliages and Cities of

The Country of Tirol; where are

Towards the Lake of Constance, the Counties of

The Protection of the Bishopricks of

The Duchy of Bavaria;

Higher,

Lower,

The Archbishoprick of

Between the Ecclesiasticks,

Between the Laicks,

Cities of the Emperour

In the Country of the Palatinate of Bavaria,

To the Princes of the House Palatine,

In the Palatinate of Newbourg,

To the Bishoprick of Aichstet,

In the Langrave of Leuchtenberg,

The Estates of the Dukedom of TIROL; which comprehendeth

The Estates of the Duchy of BAVARIA; where are comprised

The Estates of the Palatinate of BAVARIA; which are

Archbishoprick of AUSTRIA,

Lower, or AUSTRICHE, or AUSTRIA; which is divided into two parts, to wit,

And the Hereditary Estates of AUSTRIA; to wit,

The Duchy of Stirie,

The Duchy of Carniolic,

The Duchy of Carniole,

The County of Cilley,

The Windishmarch, or Marquisate of Vindes,

Higher,
Mean,
Lower,
Higher,
Lower,
Higher,
Mean,
Lower,
Higher, or Seiche,
Lower,
Metling,
Rudolfsward.

Thirteen Cantons, which (following their Antiquity) are

URI,
SUISSE,
UNTERWALD,
LUCERNE,
ZURICH,
ZUG,
GLARIS,
BERNE,
FRIBOURG,
SOLEURNE,
BASLE,
SCHAFHOUSE,
APPENZEL,

The SUISSES, or SWITZERLAND; and that which we understand under the name, ought to be considered in three Parts, to wit, in

Their Allies; which are

The Abby and City of St. G. A. L. in Suisse,

The Bishoprick of SION, or County of Valais,

The GRISONS, divided into three Leagues or Confederacies; as

The Cities

The Bishopricks of

Subjects to the Cantons, as

To the seven Ancient Cantons

To the seven first in Range and Appenzel, the Balliages of Rhodora,

To the eight Ancient Cantons, the Balliages in Suisse of

To the twelve more Ancient Cantons, the Balliages in Italy of

To the Abby of St. Gal, the County of Toggenburg,

To the Bishoprick of Sion, towards Savoy,

Subjects to the Allies, as

And to the same the Protection of the Signicury of

Zurich, Protestant,

Berne, Protestant,

Lucerne, Catholic,

Uri, Catholic,

Soleur, Catholic,

Unterwald, Catholic,

Zug, Catholic,

Glaris, Catholic and Protestant,

Basle, Protestant,

Fribourg, Catholic,

Soleur, Catholic,

Schaffhouse, Protestant,

Appenzel, Catholic,

St. Gall,

Sitten, or Sion,

Martinach,

Ilanz,

Delfenz,

Coir, or Chur,

Furtenberg,

Fuchsiat,

Tafas,

Meyenfeld,

Mulhausen,

Rotweil,

Bienne,

Neuchâtel,

Vallangin,

Geneve,

Porentruy,

Nuentap, or Bonneville,

Delmont,

Mersbourg,

Arbon,

Bifchofszel,

Werdenberg,

Forbachau,

Gastal,

Uznach,

Murat,

Obz,

Gratort,

Schurtzenbourg,

Bellinzone,

Valbrune,

Polese, or Riviere,

Rapperschwil,

Dienhofen,

Pin,

Meyenberg,

Sargans,

Wallenrad, or Riva,

Frauenfeld,

Altherten,

Bade,

Bremgarten,

Mellingen,

Lugan,

Lucerne,

Mendris,

Val Madie,

Leichensteg,

St. Morice,

Monesch,

Hochel, or Val d'Aux,

Chiavone,

Pleures, Ruinee,

Morbegno,

Soudrio,

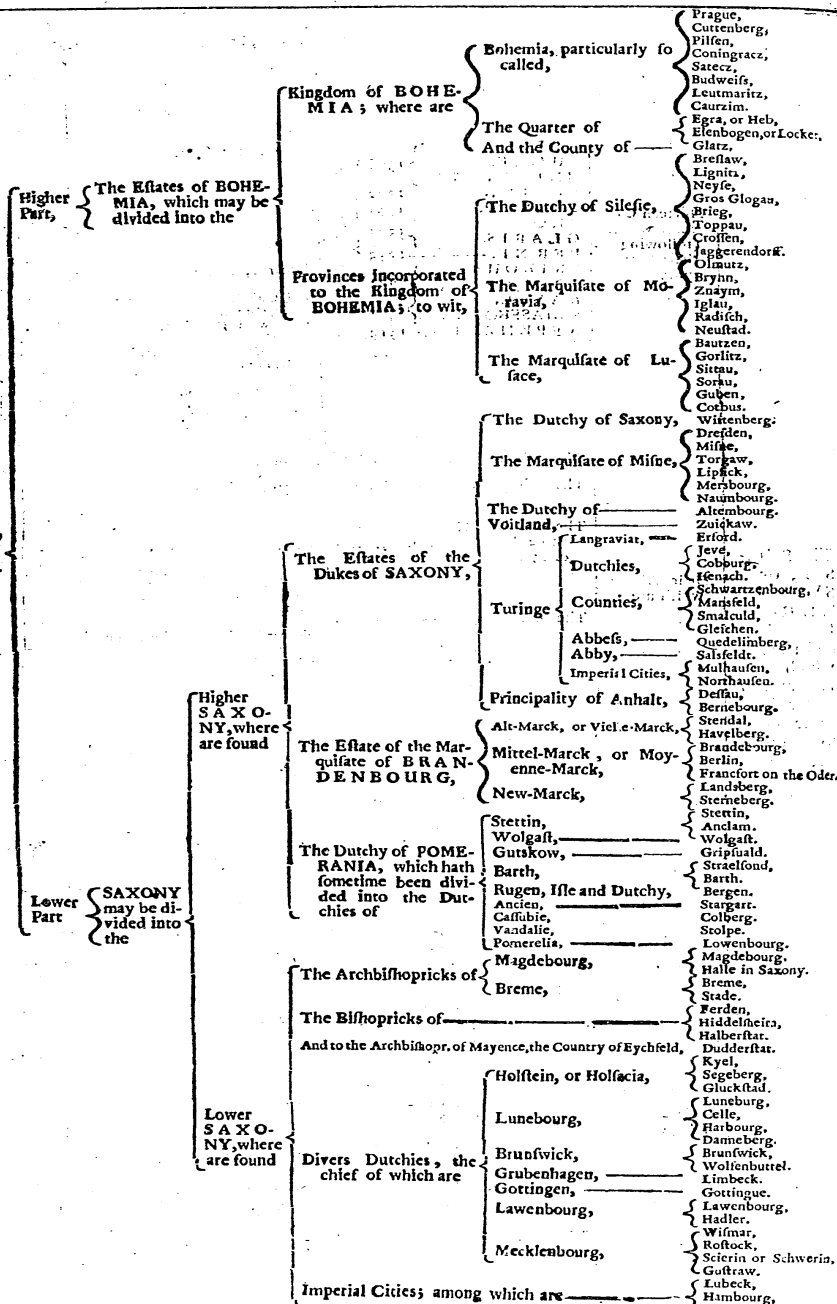
Tirao,

Worms, or Bormio,

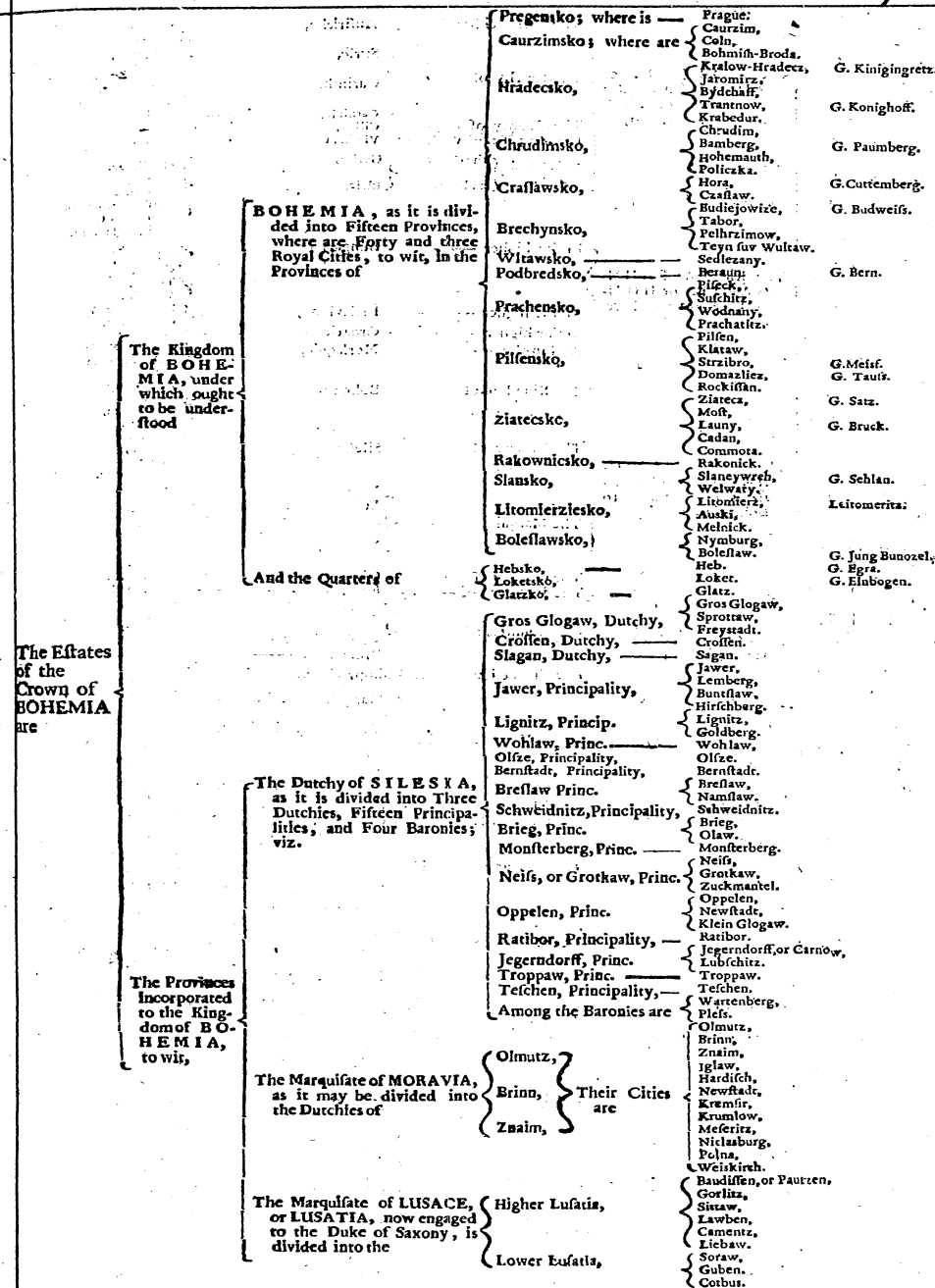
Haldenstein.

Zurich, Winterthur, Stein, Grimentee, Egliou, Berne, Lausanne, Yverdon, Nyon, Moudon, Morges, Peterlingen, Vevay, Leuzbourg, Burgdorf, Aarbourg, Bruck, Thun, Lucerne, Sursee, Sempach, Altorf, Suiz, or Suiffe, Stantsstad, Zug, Glaris, Balle, Fribourg, Corbora, Gyers, Soleur, Schaffhouse, Appenzel, Wyll, St. Gall, Sitten, or Sion, Martinach, Ilanz, Delfenz, Coir, or Chur, Furtenberg, Fuchsiat, Tafas, Meyenfeld, Mulhausen, Rotweil, Bienne, Neuchâtel, Vallangin, Geneve, Porentruy, Nuentap, or Bonneville, Delmont, Mersbourg, Arbon, Bifchofszel, Werdenberg, Forbachau, Gastal, Uznach, Murat, Obz, Gratort, Schurtzenbourg, Bellinzone, Valbrune, Polese, or Riviere, Rapperschwil, Dienhofen, Pin, Meyenberg, Sargans, Wallenrad, or Riva, Frauenfeld, Altherten, Bade, Bremgarten, Mellingen, Lugan, Lucerne, Mendris, Val Madie, Leichensteg, St. Morice, Monesch, Hochel, or Val d'Aux, Chiavone, Pleures, Ruinee, Morbegno, Soudrio, Tirao, Worms, or Bormio, Haldenstein.

GERMANY about the ELBE, and the ODER, containeth in its



The



The

The House
of A U -
S T R I C H E ,
or A U -
S T R I A ,
in divers
Branches
and Titles,
possessed
and lying
within and
near GER -
M A N Y , to
wit,

A U S T R I C H E , or
A U S T R I A ; under
the name of which
may be understood,

The Archbishopsrick of A u s t r i c h e ,

The Dutchy of

The County of
The Marquisate of Vinde, or

And towards
Italy, the County of

In the higher

The Kingdom of H U N -
G A R I E , or H O N -
G R I E , in part, where
are

In the higher

In the higher

And in the

The Kingdom of

The Kingdom of B O -
H E M I A , and the E -
states incorporated to
Bohem ; to wit,

The Dutchy of

The Marquisates of

The County of

The Signiory of

The Counties of

T I R O L ; under the
name of which are

The Protection of the Bishopsricks of

In S O V A B I A , the

In S U I S S E , or S W I T -
Z E R L A N D , the

Within or near the Grisons,

In A L S A T I A , or A L -
S A C E , the

The Palatinate of the R H I N E in part, where are many Cities, among the which
B O U R G O G N E in part, to wit, the County of Bourgogne ; where are

The Dutchies of

The Catholick L O W
C O U N T R Y ; for
the most part ; where
are

The Counties of

The Marquisate of the Empire, where is

And near the L O W C O U N -
T R Y ,

The Signiory of Malines,
The Archbishopsrick and Signiory of Cambray,
The County of Linghen,

Stirie,

Carinthie,

Carniole,
Cilley,
Vindismarch,

Gorice,

Istrie,

Esclavione,

Croacie,

Morlaquie,

Bohemia,

Silefie,

Lufacia,

Moravia,

Glatz,

Egra,

Tirol,

Veldkirck, or

Bregentz,

Marquisate of Burgau,

County of Hohenberg,

City of

Langgraviat of Nellenbourg,

County of Rhinfelden,

City of

County of Hapsburg, or

Protection of the Cities of

County of Pfirt, or Ferrette,

Part of Sungou,

Langgraviat of the higher

Alsatia,

Part of Brisgou,

And the Charollois, in part,

Brabant,

Limbourg,

Luxembourg,

Guelderland, in part,

Flanders,

Artois,

Hainault,

Namur,

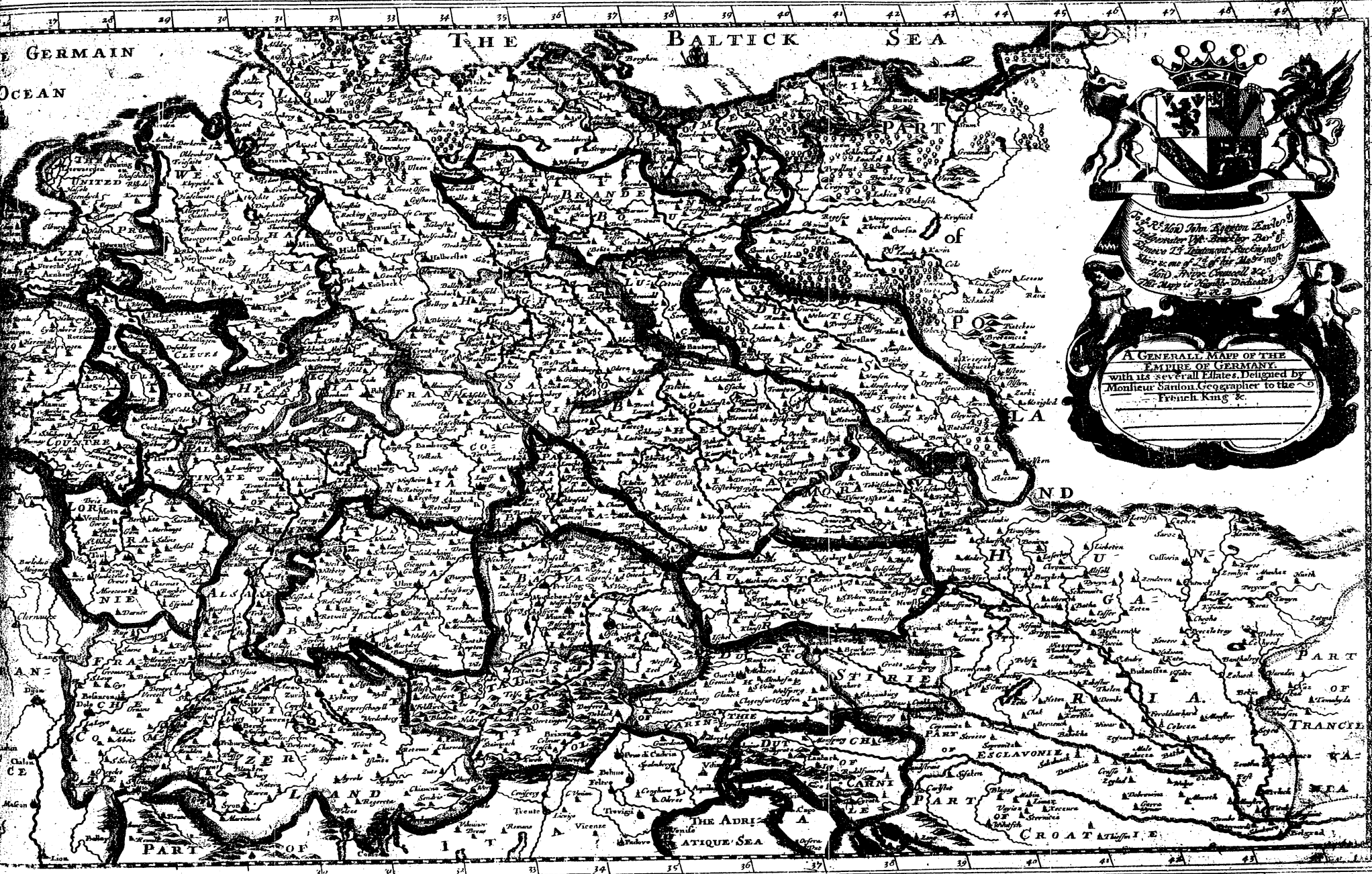
The Marquisate of the Empire, where is

The Signiory of Malines,

The Archbishopsrick and Signiory of Cambray,

The County of Linghen,

Vienna,
Cremis,
Lintz.
Grecz,
Pruck.
St. Veit,
Lavemunde,
Grucz, or Straspurg.
Laubach.
Cilley.
Merlin.
Gorice.
Gradisque.
Triefte.
Peden.
Presbourg, or Pofon,
Sopron, or Oedenbourg,
Raab, or Javarin,
Comore,
Filleck,
Caffau,
Tokay,
Varadin.
Zagrab, or Agram,
Copronitza,
Sisse.
Seng, or Senia,
St. Veit am Flaum.
Prague,
Cuttenberg.
Pilsen,
Comogracz,
Budweis.
Breslau,
Lignitz,
Neisse,
Gros Glogau.
Baudiffen,
Goriltz,
Sittau,
Sorau.
Olmutz,
Brinne,
Znaym.
Glatz.
Egra, or Heb:
Inspruck,
Hall,
Cufstain.
Feldkirck.
Bregentz,
Trente,
Brixen.
Burgau,
Guntzbourg,
Rottenbourg,
Ehingen,
Horb.
Villenger,
Stockach.
Rhinfelden,
Lauffenbourg.
Waldshut.
Habsbourg.
Constance,
Celle.
Castelz,
Pludentz,
Altkirck.
Tannes,
Besort.
Enfheim,
Keifersperg,
Heiligen Creutz.
Eribourg, in Brisgou,
Brisac,
Newenbourg.
Oppenheim,
Frankendak,
Dole,
Gray,
Salins.
Charolles.
Louvain,
Bruffelles.
Limbourg,
Luxembourg,
Thionville,
Ruremonde.
Gand, or Gaunt,
Lille.
Arras,
St. Omer.
Mons,
Valencennes.
Namur,
Anvers, or Antwerp.
Malines.
Cambray.
Linghen.



By Order of His Majesty the King of France
The General Map of the Empire of Germany
with its several Estates, Designed by
Monsieur Sarton Geographer to the
French King &c.

GERMANY

A N D

BELGIUM;

Or, THE

Low Countries.

GERMANY is in the midst of those three parts which we have placed in the middle of *Europe*, and extends it self from 45: un- to 54: degrees of *Latitude*, and from the 28th unto the 41 of *Longitude*. This position shews, that it lies in the middle of the *Temperate Zone*.

This *Germany* may be considered in three great parts, of which each may be subdivided into three others. We will call the great parts, *Germany* about the *Rhine*, *Germany* about the *Danube*, and *Germany* about the *Elbe* and the *Oder*; all which, with its lesser parts are taken notice of in the *Geographical Tables* of *Germany*, according to which method we will proceed; and then the first will be the *Franche Comté*, or *BURGUNDY*, which is bounded with *Bress*, *Switzerland*, *Lorraine*, and *Champaine*. Its ancient Inhabitants were the *Hedui*, who first called *Julius Caesar* into *France*, and its People are at present esteemed warlike, marching under the Colours of divers Princes, and are known by the name of *Walloons*. It is a Country so fertile, that it hath been called the *Flower of France*, within whose bounds some do esteem it. It hath for its chief places 1. *Besanson*, the Metropolis of *Burgundy*, seated on the banks of the *Doux*, a City of good strength and beauty, and made an *University* by the commands of *Charles* the Fifth, and Pope *Julio* the Third. 2. *Dole*, in the Balliage of *Dole*, a Town of great strength, riches and beauty, famous for its Colledge of *Jesuites*: 3. *Gray*, in the Balliage of *Amont*; and 4. *Salins*, in the Balliage of *Aval*, of some account for its rich *Salt Fountain*. Besides these places in *Burgundy* are numbred 20 walled *Towns*, and about 160 *Lordships*.

LORRAINE, bordering on *Burgundy*, famous for having had for its Duke, *Godfrey*, surnamed *Bulloigne*, the Recoverer of the *Holy Land* from the *Turks*; its Dukes now enjoy little else save the Title, the Country being seized by the *French*. It is of a fertile Soil, affording plenty of *Corn* and *Wine*, and hath store of *Salt*. Its chief places are 1. *Nancy*, in the Balliage of *Francia*, once dignified with the Seat of the Duke; 2. *Vandrevange*; 3. *Mirecourt*; 4. *Vancœur*, the Birth-place of *Joan de Pucelle*; 5. *Pont-a-Maison*, so named by reason of its Bridge over the *Mosa*; 6. *Metz*, and 7. *Toul*.

Between

Country of
Barrois.

Between this Province and *Champaine* lieth the Country of *BARROIS*, and belongeth to *Lorrain*, whence the eldest Sons of these Dukes were styled Princes of *Barri*. Its chief places are *Bar-le-Duc*, and *St. Michael*.

The several
parts of the
Catholic Low
Countries.

The *Catholic LOW COUNTRIES* may be contained under the Dukedom of *Brabant*, *Limbourg*, and *Luxembourg*; the Earldoms of *Flanders*, *Artois*, *Hainaut*, and *Namur*; the Marquisate of the *Empire*; the Signiory of *Malines*, &c. The whole Country is exceeding fertile, yet found not very advantageous to the *Spaniards*, who are Masters of it.

Dukedom of
Brabant.

BRABANT, for the most part of an ungrateful Soil, yet well inhabited and stored with walled *Towns* and *Villages*; the chief amongst which are 1. *Lovaine*, a fair and large City, being about four miles in circuit within its *Walls*, and six without, wherein are many delightful *Gardens* and *Meadows*, and is of note for its *University*, where there is a *Seminary* for *English Jesuits*. 2. *Brussels*, a City for its fairness and elegance of its *Buildings* (its extent being as large as *Lovaine*) giveth place to few in the *Netherlands*. It is at present the residence of the *Spanish* Governour for the *Low Countries*; and 3. *Breda*, once the Seat of the Prince of *Orange*, till taken by the *Spaniards*.

City of Ant-
werp.

To the Dukedom of *Brabant* doth belong the Marquisate of the *EMPIRE*, whose chief place is *Antwerp*, or *Antwerp*, seated on the *Schelde*, out of which it hath eight Channels cut, the biggest of which are capable to receive about 100 great *Ships*, which doth much facilitate its Trade; it is a fair and large City, being about seven or eight miles in circuit within its *Walls*, which are strong, high, and broad enough for *Coaches* to pass, on which the *Nobility* and *Gentry* commonly use to recreate themselves. In this City are abundance of *Painters* and *Gravers*, whose work is well received abroad. To this Dukedom doth also belong the Signiory of *Malines*, whose chief place bears the same name: likewise the Archbishoprick and Imperial City of *Cambria*; of good account; and the Bishoprick and Imperial City of *Liege*, seated on the *Meuse*, a Town of good beauty, being so filled with fair *Abbies* and *Monasteries*, that it is called the *Paradise* of the *Priests*.

Dutchy of
Limbourg.

LIMBOURG hath many good *Towns*, the chief of which are 1. *Limbourg*, seated on the Banks of the *Weser*, and giveth name to the Dutchy. 2. *Mastrich*, a place of great strength, being held almost impregnable, yet was gained lately by the *French*; but through the assistance of the *English*, under the command of his Grace, *James Duke of Monmouth*. 3. *Dalen*, fortified with a *Castle*, &c.

Dukedom of
Luxembourg.

LUXEMBOURG, Northwards of *Lorrain*, said to contain about 1000 *Villages*, and 23 walled *Towns*, the chief of which are 1. *Luxembourg*, seated on the *Elze*. 2. *Thionville*, which, with the other places, suffered much in the time of the Wars betwixt *France* and *Spain*.

Forrest of
Ardenna.
The Spaw.

In this Province is the famous Forrest of *Ardenna*, once about 500 miles in compass, now scarce 90; and in it, or on its edges, is the no less famous Waters of the *Spaw*, so much frequented by the *Europeans* in and about the Month of *July*, being found exceeding good for several Diseases in the body Man.

F L A N

F L A N D E R S.

FLANDERS should be the most famous of all these Countries, since it communicates its name to them all; it is divided into *Tutone*, *Wallone*, and *Imperiale*. The chief Cities and places in this Earldom are 1. *Ghent*, whose *Walls* are seven miles in compass, and was once of great beauty; but now through the Seditiousness of its Inhabitants, it is much ruined, a good part of it being wast-ground; it is watered by the Rivers *Scheld* and *Ley*, which run through the City and make 26 *Islands*, which are conjoined by 98 *Bridges*. This place is particularly famous for being the Birth-place of *John of Gaunt*, Duke of *Lancaster*. 2. *Bruges*, seated on a large and deep Channel of the Sea, from which it is distant about three Leagues; once a famous *Mart Town*, but now of small account as to matters of Traffick. 3. *Ipres*, seated on a River so called, a Town of great strength. 4. *Gravelines*, or *Gravelines*, seated on the Sea-shoar, a place of good strength; and 5. *Lille*, of some account. The four principal Ports in *Flanders* are, 1. *Dunkirk*, now in the possession of the *French*, a place of good strength, especially of late, when the *English* were Masters of it; nigh to which is the impregnable Fort of *Mardike*, also so made by the *English*. The Inhabitants of this Town are found very troublesome on the Seas, to those that are their Enemies. 2. *Ostend*, an exceeding strong place, as is manifest by its holding out a Siege of three years, three months, three weeks, and odd days, against the Arch-Duke; nigh to which was fought that bloody Battel in 1660, between the Arch-Duke *Albertus*, and the *States*, where (by the valour of the *English*) the Victory was gained: and 3. *Sluce*, seated at the Mouth of the Channel of *Bruges*, where it enjoys a fair and commodious Haven, capable to receive about 500 Sail of good *Ships*; now subject to the *States of Holland*.

Throughout all *Flanders* are a great many *Religious-houses* and *Nunneries*, which are filled with virtuous *Gentlewomen* (for the most part, *Maidens*) who live a Religious life, and at spare times makes curious Works, which are disposed of by the *Lady Abbess*.

The Earldom of *ARTOIS*, North of *Flanders*, is divided into *Wallone* and *Flamingat*, and said to contain about 750 *Villages*, and 12 walled *Towns*; the chief among which are 1. *Arras*, where the *Tapestries*, *Hangings*, and *Cloths* of *Arras* were first invented and made. 2. *Hesdin*, a very strong Frontier Town towards *Picardy*. 3. *Bapaumes*. 4. *St. Omer*, and 5. *Aire*.

The Earldom of *HATNAULT*, West of *Flanders*, is said to number about 900 *Villages*, and 24 *Towns*; the chief amongst which are 1. *Mons*, an ancient and strong Town; 2. *Valenciennes*, so seated on the *Scheld* that it cannot be besieged, except with three Armies at one time. 3. *Maubengel*. 4. *Avesnes*, about which are digged excellent white *Stones* for building; 5. *Landrechies*, and 6. *Philippeville*.

The Earldom of *NAMUR*, North of *Brabant*, hath about 180 *Villages*, and 4 walled *Towns*, viz. *Namur*, *Charlemont*, *Bovines*, and *Valencourt*. This Country is very fertile in *Grains*, hath store of Mines of *Jasper*, all sorts of *Mirble*, and abundance of *Iron*.

Under the subdivision of the Provinces upon the *Rhine*, may be comprehended *Alsatia*, the *Palatinate* of the *Rhine*, the *Archbishopricks* and *Electorates* on the *Rhine*, the *Estates* of the Succession of *Cleves* and *Julier*, and the *United Provinces* of the *Low Countries*, &c.

ALSATIA, Westwards of *Lorrain*, hath for its chief places, 1. *Strasbourg*, formerly *Argentina*, because here the *Romans* received the Tribute of the Conquered Nations, seated in Lower *Alsatia* near the *Rhine*, from which here is a Channel cut for the conveyance of *Commodities*. This City is about 7 miles in circuit, is a good place of strength, and famous for its many *Rarities*; as its admirable *Clock*, a description of which I shall here set down, which was given me by an Ingenious person, who took this particular account thereof.

K

The

Earldom of
Flanders de-
scribed.Earldom of
Artois.Earldom of
Hainault.Earldom of
Namur.Province of
Alsatia.

The Description of the Clock and Clockhouse at Strasburgh, and of many notable and strange things in and about the same.

FOR the curiousness of the Work it self I cannot set it forth, neither can any man take pleasure of the Workmanship, but such as see it. In the whole work there are Nine things to be considered, which ascend up one above another, as the description sheweth, whereof eight are in the Wall; the ninth, (and that the most wonderful) standeth on the ground, three foot or such a matter from the Ground and Wall, and that is a great Globe of the Heavens perfectly described, in which are three Motions; one of the whole Globe, which betokeneth the whole Heavens, and moveth about from the East to the West in four and twenty hours: the second is of the Sun, which runneth through the Signs there described, (by that Artificial motion it hath) once every year: the third is of the Moon, which runneth her course in 28 days. So that in this Globe you may view (as if you had the Heavens in your hand) the Motions of the whole Heavens, the motion of the Sun and Moon, every Minute of an hour, the rising and falling of every Star (among which Stars are the Makers of this work *Dassipodius* and *Volkenstenius*) described, yea better than in the true Heavens, because here the Sun darkneth them not by day, nor the Moon by night. The Instruments of these Motions are hid in the Body of a *Pelican*, which is portraied under the Globe. The Pole lifted up to the Elevation of *Strasburgh*, and noted by a fair Star made in *Brass*: the *Zenith* is declared by an Angel placed in the midst of the *Meridian*. The second thing to be observed (which is the first on the Wall) are two great Circles one within another, the one eight foot, the other nine foot broad, the uttermost moveth from the North to the South once in a year, and hath two Angels, the one on the North-side, which pointeth every day in the Week, the other on the South-side, which pointeth what day shall be one half year after. The Inner circle moveth from South to North once in a hundred years, and hath many things described about it; as the Year of the World, the Year of our Lord, the circle of the Sun, the processions of the *Aequinoctials*, with the change of the *Solstitial* points, which things fall out by the motion which is called *Trepidationis*: the Leap-year, the Movable Feasts, and the Dominical Letter, or Golden Number, as it turneth every year. There is an immovable *Index*, which intolotheth for every year all these things within it; the lower part of which *Index* is joynd to another round Circle, which is immovable, wherein the Province of *Alsacia* is fairly described, and the City of *Strasburgh*. On both sides of these Circles on the Wall, the Eclipses of the Sun and Moon are, which are to come for many years, even so many years as the Wall might orderly contain. The third thing which is to be seen, a little above this, is a weekly motion of the *Planets* as they name the day, as on Sunday the Sun is drawn about in his Charriot; accordingly as the day is spent, and so drawn into another place, so that before he be full in, you shall have Monday, that is, the Moon clean forth, and the Horses of Mars's Charriot putting forth their heads; and so it is for every day in the week: On this side there are nothing but dumb Pictures to garnish the Wall. The fourth thing, which is next above this, is a Dial for the Minutes of hours, so that you shall see every Minute pass. Two beautiful Pictures of two Children are joynd to either side of this; he which is on the North-side hath a Scepter in his hands, and when the Clock striketh, he telleth orderly every stroke. He on the South-side hath a fine *Hour-glass* in his hand, which runneth just with the Clock; and when the Clock hath stricken, he turneth his *Hour-glass*, which is run forth, and holdeth it running. The first thing which is next above the Minute-Dial, is the Dial for the hour, containing the half parts also: the uttermost circumference containeth the hours; but within it is made a curious and perfect *Astrolobe*; whereby is shewed the motion of every Planet, his aspect, and in what *Sign*, what *degree*, and what *hour* every one is in every hour

hour of the day; the opposition likewise of the Sun and Moon, and the Head and Tail of the *Dragon*. And because the Night darkneth not the Sun, nor the Day the Moon, or other Planets, therefore their Courses are here exactly seen at all times. The sixth thing, which is next unto this, is a Circle wherein in the two Signs of the Moon, rising and falling, at two several hollow places it is seen at what state she is, and her Age is declared by an *Index*, which is wholly turned about once every Month. The seventh thing, which is about this, are four little Bells, whereon the Quarters of the hour are stricken; at the First quarter cometh forth a little Boy, and striketh the first Bell with an Apple, and so goeth and stayeth at the fourth Bell until the next Quarter; then cometh a lusty Youth, and he with a Dart striketh two Bells, and succeedeth into the place of the Child; at the Third cometh forth a man in Arms, with a War-Mace in his hand, and striking three Bells he succeedeth into the place of the young Man; at the Fourth quarter cometh forth an Old man with a Staff, having a Crook at the end, and he with much ado, because he is Old, striketh the four Bells, and standeth at the Fourth quarter until the next Quarter; forthwith to strike the Clock cometh Death: in the Room above this, for this is the eighth thing, (and this understand, that at every Quarter cometh he forth, thinking to catch each of those former Ages away with him;) but at a contrary side, in the same Room where he is, cometh Christ forth, and driveth him in: but when the last Quarter is heard, Christ giveth him leave to go to the Bell which is in the midst, and so striketh he with his Bone according to the number of the hours, and there he standeth at the Bell, as the Old man doth at his quarter Bell, until the next Quarter, and then go they in both together. The ninth and last thing in this right Line, is the Town at the top of the Work, wherein is a noble pleasant Chime, which goeth at three, seven, and eleven of the Clock, every time a diverse Tune to one of the *Psalms*, and at *Christmas*, *Easter*, and *Whitsontide*, a Thanksgiving unto Christ: and when this Chime hath done (the Cock, which standeth on the top of the Town, on the North-side of the main Work,) having stretched out his Neck, shaken his Comb, and clapped his Wings twice, Croweth then twice; and this verily he doth so shrill and naturally, as it would make any man to wonder; and if they list, which attend the Clock, they make him to Crow more times. In this Town whereon this Cock standeth, are conveyed all the Instruments of those motions which are in the foresaid described things.

The other places of note in this Lower *Alsacia*, are 2. *Altkirck*, in the part of *Sungou*; 3. *Ensfheim*, in higher *Alsacia*; 4. *Frubourg*, in *Brisgau*; 6. *Offenbourg*, in *Mortnau*; and 7. *Bade*, in the Marquisate.

The *PALATINATE* of the *RHINE*, which is divided or severed into the Estates of the *Palatinate*, the Estates of the Princes of the House *Palatinate*, and the Bishopricks and Imperial Cities of *Spires* and *Wormes*. The chief places are *Heidelberg*, seated in a Plain, but environed on three sides with high Mountains, and the other regards the *Rhine*, from which it is distant about a mile; it is dignified with the Seat of the *Palgrave*, as also with an *University*. 2. *Spires*, seated in a Plain about half a mile from the *Rhine*, a City of more Antiquity than Beauty and Trade, being of note for the *Imperial Chamber* here continually kept. 3. *Wormes*, a City also of good Antiquity for the many *Imperial Parliaments* here formerly held; and 4. *Frankendal*, a new, fair, strong and beautiful City, about which grow great plenty of *Rhenish Wines*.

The *Electors* and *Archbishopsricks* on the *Rhine*, are those of *MAT. ENCE*, whose chief places are *Mayence* and *Aschaffenbourg*; of *TREVE*, whose chief places are *Treves* and *Goblentz*; and of *COLOGNE*, whose principal places are *Cologne* and *Bonne*.

The Estates of the Succession of *CLEAVE LAND* contain the Dutches of *Cleves*, of *Julier*, and of *Berge*. The Dutchy of *Cleves* and County of *Marke*, is in the Marquisate of *Brandenburgh*, and hath for its chief places *Wesel* and *Hamme*, in the County of *Marks*.

K 2

The

Palatinate of the Rhine.

Electors of Mayence, Treves, and Cologne.

Cleaveland. Dutchy of Cleves.

Dutchy of
Juliers.

The Dutchy of *JULIERS* hath for its chief places *Aken*, where the *Emperour*, after his Election, is invested with the *Silver Crown* of Germany; this place is of great esteem for its *holy Relicks*; and 2. *Juliers*.

The Dutchy of *BERGE*, or *MONTE*, hath for its chief places *Dusfeldrop*, *Hattingen*, and *Arusberg*.

The UNITED PROVINCES.

Under the name of the *United Provinces* of the *LOW COUNTRIES*, or *NETHERLANDS*, are contained the Dutchy of *Guelders*, the Earldoms of *Holland*, *Zeland*, and *Zutphen*, and the Lordships of *Utrecht*, *Overyssel*, *Groningue*, and *Malines*.

Dutchy of
Guelderland.

The Dutchy of *GUELDERS*, or *GUELDERLAND*, Westwards of *Brabant*, is divided into the Quarters of *Beuvre*, *Veluwe*, and *Guelders*, particularly so called; wherein are the Towns of 1. *Nieumegue*, once a Free City, seated on the branch of the *Rhine* called *Whael*, and made one of the *Imperial Seats* in these parts by *Charles the Great*; the other two being *Thionvil* and *Aken*. 2. *Arnhem*, the usual residence of the *Dukes* of *Guelders*; 3. *Ruremond*, so called from the River *Ruer* and *Monde*; 4. *Harderwick*, from a Village made a walled Town by *Osbo* the third Earl; 5. *Guelders*; 6. *Venlo*; and 7. *Bommel*.

Earldom of
Holland.

The Earldom of *HOLLAND* hath on the West and North the *Sea*, from which no part is above three hours distance; in this Earldom are said to be about 400 *Villages*, and 23 *Towns*; the chief of which are *Amsterdam*, which of late, by the addition of the new to the old, is a fair, strong, and beautiful City, being the most rich and powerful of all the *Netherlands*; famous for its great Trade to the utmost parts of the *World*, and as infamous for its toleration of all *Religions*: It is seated on the *Tay*, which like a large, but calm *Sea*, floweth on the North-side; and the River *Amster*, taking its course from the South, through three Lakes entrench the City, passeth through it, and falleth into the *Tay*. This City may be said to be the greatest *Haven Town* in the *VWorld*, where there are commonly to be seen about a 1000 Sail of *Ships* to ride; and by reason of its vast Trade to Foreign parts, is found to have great plenty of all known Commodities, as being general *Traders* to most places of *Traffick*. 2. *Rotterdam*, famous for giving Birth to *Erasmus*; 3. *Delft*, inhabited most by *Brewers* and their Relations; 4. *Harlem*, where Printing was first invented, and the first Book that ever was Printed was *Tully's Offices*; 5. *Leyden*, dignified with a famous *University*; the Town consisteth of 41 *Islands*, the passage from one to the other being by *Boats* and *Bridges*, there being about 40 of *Wood* and 110 of *Stone*. 6. *Dort*, where, in *Anno* 1618. was held a National Synod against the *Arminians*; 7. *Brille*; 8. *Alema*; 9. *Incluse*; and 10 the *Hague*, a Village, but the largest in the *VWorld*, equalizing many fair Cities, numbring about 2000 Houses, and is very populous; it is adorned with the Palaces of the *States General*, who have here their Assemblies.

It will not be improper to speak of the power of these *States* by Sea, which is so great, that in *Holland*, *Zeland*, and *Friesland*, they are able to put forth to Sea about 2500 Sail of *Ships* for burthen and war. Nor can it be forgot how *Margaret*, Sister to *Floris* the Fourth, Earl of *Holland*, had at one Birth (being 42 years of Age) 365 Children, which were all Christened in two Basons in the Church of *Lafduen*, by *Guido* Bishop of *Utrecht*, who named the Males all *Johns*, and the Females *Elizabeths*; and the Basons are yet to be seen in the said Church.

A strange
Birth of 365
Children.

The

The Earldom of *ZELAND*, quasi, *Sea and Land*, consisting of seven *Islands*, the remainder of fifteen, which the *Seas* are said to have swallowed up, in which were abundance of good *Towns* and *Villages*. The seven *Isles* yet remaining are 1. *Walcheren*, whose principal Towns are *Middlebourg*, once enjoying a good Trade, by the residence of the *English Merchant-Adventurers*; and *Flushing*, the first Town that the *States* took from the *Spaniards*; being now a place of good strength, and held to be the Key of the *Netherlands*. The second *Isle* is *South-Beverland*, whose chief Town is *Tergowise*. The third *Schoven*, where are *Sirexee* and *Brevers Haven*. The fourth *Tolen*, whose principal place is *Tertolene*; the other three *Islands* are *North-Beverland*, *Duveland*, and *Wolferdike*. This Country is destitute of *Fresh-water* and *Wood*, but in recompence is very fertile in *Grains*.

The Earldom of *ZUTPHEN*, whose chief places are *Zutphen*, seated on the *Tissel*, a place of great strength.

The Barony of *UTRECHT*, North of *Holland*, hath 70 *Villages*, and 5 walled *Towns*; the chief of which are 1. *Utrecht*, a City commodiously seated for passage by *Boats* to divers other *Towns*, which, with the benefit of the common *Ferries*, one may go in a day from hence to any of the 59 walled *Towns*, equally distant from it; and to Dinner to any of the 26 *Towns*, and return at Night. 2. *Rhenen*, 3. *Amsford*, 4. *Wicker*, and 5. *Montfort*.

The Barony of *OVERTSEL*, bounded on the East with *Westphalia*; its chief places are *Deventer*, and *Swall*, in the quarter of *Saland*; *Oldenze*, in the quarter of *Tuente*; and *Goevorden*, in the quarter of *Drente*.

The Barony of *WEST-FRIEZLAND* is bounded on the West and North with the *Sea*, is said to number 340 *Villages* and 10 *Towns*, the chief of which are 1. *Louwarden*, where there is held the *Common Council* for the Province; 2. *Harlingen*, a Maritim Town; 3. *Franicker*, of late made a *University*; and 4. *Dockum*.

The Barony of *GRONINGUE* is a Town in *West-Friesland*, having under its Jurisdiction 145 *Villages*, of which the chief are *Groningue*, *Old Haven*, and *Keykerke*.

Under the name of *Germany* beyond the *Rhine*, we comprehend *Franconia*, *Hessia*, and *Westphalia*.

The Province of *FRANCONIA* is divided into three parts, viz. into *Ecclesiasticks* or *Bishopricks*, *Lajcks* and *Imperial Cities*: the *Bishopricks* are those of *Wurtzberg*, *Bamberg*, and *Mergetheim*, Cities of good account; the *Lajcks* are the Marquises of *Cullembach* and *Onspach*, and the Counties of *Hohes*, whose chief place is *Weickersheim*; and *Wertheim*, whose chief place bears the same name: and the *Imperial Cities* are 1. *Nuremberg*, seated in a barren Soil; yet by reason of the Industry of its *Inhabitants* is a place of good Riches, and well frequented by *Merchants* for their *Wares*, known by the name of *Nuremberg-Wares*. 2. *Francfort*, seated on the *Maine*, which severeth it into two parts, but joyned together by a fair Bridge. It is encompassed with a strong double Wall; it is a Free City of the *Empire*, and famous for the two *Fairs* or *Markts* for *Books* here annually held; the one in *Lent*, and the other in *September*: and 3. *Schweinfurt*.

The Lantgravedom of *HASSIA*, Eastwards of *Saxony*; its chief places are 1. *Gassel*, a City seated in a fertile Soil, yet of no great beauty; 2. *Marpurg*, an *University*, and the Seat of the Second House of the *Lantgraves*; and 3. *Dormestad*, the Seat and Inheritance of the youngest House of the *Lantgraves*.

To this Province doth belong the Country of *WALDECK*, whose Earls are subject to the *Lantgraves*; its chief place is *Gorbach*. Likewise to this Province belongeth *WETTE RAVIA*, whose chief places are *Nassau*, *Solins*, *Handu*, and *Ilenbourg*.

Lantgravedom
of Hassia.

The

Province of
Westphalia.Bishoprick of
Cöllen, &c.The Counties
belonging to
Westphalia.Imperial Ci-
ties.Province of
Sovabia, with
its Parts.Imperial Ci-
ties.

The Province of *WESTPHALIA* is divided into three parts, to wit, *Ecclesiasticks*, *Counties*, and *Imperial Cities*. This Province was the ancient habitation of the *Saxons*; the Soil is very fertile, wonderfully stored with *Acorns*, which makes their *Swines-flesh* excellent, and so much esteemed. The chief places in the *Ecclesiasticks* are those of *Paderborne*, *Minde*, and *Arenberg*; also the Bishopricks of *Cöllen*, *Münster*, and *Triers*. The Bishoprick of *CÖLLEN* taketh up a great part of *Westphalia*, and hath for its chief place *Cöllen*, a City well stored with *Schools* for the education of Youth; and here (according to Report) were interr'd the Bodies of the three *Wise-men* which came from the East to worship our *Saviour*; vulgarly called the three *Kings of Cöllen*. The Bishoprick of *MÜNSTER* hath its chief place so called, seated on the River *Ems*, where there is a Monastery so called, built by *Charles the Great*; 2. *Warendrop*, and 3. *Herwerden*. The Bishoprick of *TRIERS* hath for its chief places 1. *Triers*, an ancient City, seated on the *Moselle*; 2. *Boppard*, seated on the said River; and 3. *Engers*.

The Counties belonging to the Province of *Westphalia*, are 1. *EMBDEN*, whose chief place is *Aurich*; 2. *OLDENBOURG*, whose chief place is so called; 3. *HOFE*, which hath for its chief place *Nienbourg*; 4. *LIPPE*, whose chief place is *Lipstad*; 5. *RAVENSBERG*, whose chief place is *Herword*; and 6. *BENTHEM*, whose chief place bears the same name.

And lastly, the *Imperial Cities* are those of *Embsen*, seated low, and therefore no good *Winter City*; but in the Summer is very pleasant: and *Zoest*, of some account.

We have already subdivided *Germany* about the *Danube*; its parts, as they are set down in the *Geographical Table of Germany* about the *Danube*, are as followeth.

The Province of *SOVABIA* is divided into several parts and Bishopricks, viz. the Bishoprick of *AUSBOURG*, whose chief places are *Dillengen* and *Fuessen*. The Bishoprick of *CONSTANCE*, whose chief place is *Mersbourg*. The Bishoprick of *COIRE*, whose chief place is *Marsila*. The Duchy of *WIRTEMBERG*, whose chief places are *Stuttgart*, dignified with the Seat and residence of the *Duke*; and *Tubingue*, of note for being a University, both *Imperial Cities*. The Marquisate of *BURGAU*, which hath for its chief place *Guntzbourg*. Part of the Marquisate of *BADENDURLACK* hath for its principal place *Baden*, seated on the *Rhine*, and honoured with the residence of the Marquess for the Winter Season, as *Milberg* is for the Summer. The County of *FURSTENBERG* hath for its chief place *Meskirch*. The County of *HOHENBERG*, whose chief place is *Ebingen*. The County of *RHINFELD*, hath for its chief places *Rhinfeld* and *Lauffenbourg*. The Barony of *WALDBOURG*, whose chief place bears the same name. The Marquisate of *ANSPACH*, whose chief place bears the same name. The Bishoprick of *WEITZBERG*, whose chief place bears the same name. The Bishoprick of *MENTZ*, whose chief place is so called, seated on the *Main*; this Bishop is the chief *Elect* of *Germany*. The Bishoprick of *BAMBERG* hath for its chief places *Bamberg*, seated on the *Main*; and *Fochiam*, where (as 'tis said) *Pontius Pilate* was born.

Besides these Parts or Countries there are several *IMPERIAL CITIES*, as they lye on this side, and beyond the *Rhine*; as 1. *Ausbourg*, seated on the *Leith*, in a fruitful Plain for *Corn* and *Pastures*, Northwards of the *Alpes*, from which it is not far distant; it is a Free City of the *Empire*, governed by a Senate of *Citizens*, and is a place of beauty and good strength. 2. *Constance*, 3. *Überlingue*, with twelve others, as are mentioned in the *Geographical Table of Germany*, about the *Danube*.

The

Switzerland
and its parts.

The Province of *SWITZERLAND*, the *SWISSES*, or *HELVE-TIA*, South of *Italy* and *Savoy*, is divided into 13 *Cantons*; and Confederates with them are 12 or 13 *Allies*, and 20 or 25 *Subjects*; all which, with the names of the several *Cantons*, &c. are set down in the *Geographical Table of Switzerland*. The whole Country is in length 240 miles, and about 180 in breadth; it is exceeding populous, and the Men being good *Souldiers* and adding themselves to the Wars, serve under the Colours of any Prince that hireth them. This Country is said to lie the highest of any in *Europe*, as sending forth four *Rivers*, which run through its quarters, viz. the *Rhine*, *Danube*, the *Po*, and the *Roanus*. But to proceed to its chief places in the *Cantons*, and then with those Confederates with them; and 1. *Basle*, seated on the *Rhine*, which separates it into the greater and lesser *Basle*, once an *Imperial City*, but now joyned to the *Cantons*; it is of note for its University, for the notable Council here held, and for the Sepulchers of *Erasmus*, *Hottoman*, *Clareanus*, and *Pontinus*. 2. *Zürich*, seated on the Lake *Zurifca*, which separates it into two parts, but joyned together with three fair Bridges, that in the midst serving for a Meeting-place for Merchants. 3. *Lucerne*, seated on the banks of a great Lake so called; 4. *Steine*; 5. *Berne*; 6. *Soleurne*; 7. *Fribourg*, and 8. *Schaffhouse*.

Amongst the Confederates with the *Switzers*, the chief are the *Commonwealth of GENEVA*, whose Territories (though not above eight miles in circuit, and the City not above two miles in circuit) is said to contain about 16, or 17000 Souls; it is seated on the Lake *Lemanus*, through which the River *Rhone* takes its course, which divides the City in two parts; it is a fair City, well fortified, and wholly in the possession of the *Protestants*, and since the Reformation is become a flourishing University. The Government of this *State* is by a *Common-Council*, consisting of 200, the four chief amongst them are called *Syndiques*. The Magistrates of this City allow of all Civil Recreations on *Sundays*; to their Ministers they allow no *Tithes*, but give them yearly Stipends.

The *GRISSENS* hath for its chief place *Coire*; also *SANGAL*; and the Territory of *VALLAIS*, or *Valesia*, seated wholly amongst the *Alpes*; a Country of no great bigness, consisting in craggy Rocks and impassible Hills, yet intermixed with delightful and rich Vallies. Its chief places are *Sittin*, or *Sion*, the only walled Town in the Country, and is a place of great strength, as well by Nature as Art, being seated on a high and steep Hill, 2. *Martinach*, of note for its Antiquity; and 3. *Augaunum*, or *St. Maurice*, esteemed the Key of the Country, especially in the Winter, the Ice stopping all other entrances; here being a Bridge over the *Rhine* for that purpose, which is strongly built, and as well fortified and guarded for fear of a Surprizal. Besides these several other Places, Bishopricks and Cities, which are their *Allies* and *Subjects*, which I have observed in the *Geographical Table of Switzerland*.

The Province of *BAVARIA* is divided into the Dukedom of *Tirol*, the Duchy of *Bavaria*, and the Palatinate of *Bavaria*.

The Estates of the Dukedom of *TIROL* is about 70 miles in length, and as much in breadth; it hath for its chief places 1. *Inspruck*, seated on the *Oenus*. 2. *Trent*, a Bishoprick, seated on the River *Adelfs*, famous for the General Council there held by Pope *Paul the Third*, against the Doctrines of *Luther* and *Calvin*, which continued off and on for the space of 18 years. 3. *Tirol*, and 4. *Feldkirch*. The Soil of this Country is very fertile, and in many places hath store of *Silver-Mines*, which are found profitable to the *Arch-Dukes*.

The Duchy of *BAVARIA* hath for its chief places, 1. *Munick*, seated on the *Aser*, dignified with the residence of the Duke. 2. *Saltzbourg*, seated on the River *Saltzech*, a City honoured with a Bishoprick; and here lieth interr'd the Body of *Paracelsus*. 3. *Passau*, famous for the often meeting here of the German Princes. 4. *Ratisbone*, seated on the *Danove*, of note for the interview

Common-
wealth of
Geneva.The Grissons,
Sangal, Vallais.Province of
Bavaria, with
its parts.
Dukedom of
Tirol.Duchy of
Bavaria.

interview here made between the Emperor *Charles* the Fifth, and *Maurice* Duke of *Saxony*. 5. *Frisingue*, seated on the ascent of a Hill, and not far from the River *Mosauis*; and 6. *Inglstadt*, seated on the *Danube*, and dignified with an University.

Palatinate of
Bavaria.

The Palatinate of *BAVARIA* hath for its chief places 1. *Amberg*, seated amongst *Silver-Mines*. 2. *Newbourg*, usually the portion of some of the younger *Palatines*. 3. *Castel*, where the *Palatines* of the *Rhine*, when they spout in this Country, use to keep their Court. 4. *Sultzbach*, 5. *Burglenfeld*, 6. *Aichstet*, and 7. *Pfreimt*.

Dukedom of
Austria, with
its parts.

The Arch-Dukedom of *AUSTRIA* is seated on both sides of the *Danube*, and hath united to it, as Hereditary possessions of that House, the Provinces or Dukedoms of *Stirie*, *Carinthie*, *Carniole*; the County of *Cilly*, and the Marquisate of *Windschmarch*.

Austria.

The particular Dukedom or Province of *AUSTRIA* is separate from *Hungary* on the East by the *Leitha*; its chief places are 1. *Vienna*, seated on the *Danube*, at present the Seat of the *German* Emperours; as being the Metropolitan, fairest, and most beautiful City in all *Germany*, being adorned with many magnificent *Temples* and stately *Monasteries*; but above all, with a most sumptuous and Princely *Palace*, where the Emperor keeps his Court. It is esteemed the Bulwark of the Country against the *Turks*, being of note for the repulse they gave the *Turks* in *Anno* 1526, when besieged by about 200000, under the conduct of *Solyman* the Magnificent; and were thence repulsed with the loss of about 80000 Men. 2. *Ems*, so called from the River on which it is seated; 3. *Wells*; 4. *Crems*, seated on the *Danube*; 5. *Horn*, 6. *Newstat*, and 7. *Bade*.

Dukedom of
Stirie.

The Dukedom of *STIRIE* is contiguous to *Austria* on the South; hath for its chief places *Greiz*, *Pruck*, and *Pettau*.

Dukedom of
Carinthie, &c.

The Dukedom of *CARINTHIE* is South of the *Alpes*; and hath for its chief places 1. *St. Veit*, the Metropolitan City of this Country; 2. *Lava-munde*, and 3. *Gruetz*.

The Dukedom of *CARNIOLE*, adjoining on *Italy* Westwards, hath for its chief places *Laubach*, *Gorice*, *Gradisgue*, and *Czirknitz*.

The County of *CILLET*, whose chief place bears the same name.

The Marquisate of *WINDSCHMARCH*, which hath for its chief places *Metting*, and *Radolfsweid*.

Germany about the *Elbe* and *Oder*, contains *Bohemia*, and the Higher and Lower *Saxony*: To *Bohemia* are incorporated the Dukedom of *Silesia*, and the Marquisates of *Moravia* and *Lusatia*.

B O H E M I A.

Kingdom of
Bohemia.

The Kingdom of *BOHEMIA* is encompassed with the *Hercynian Forests*, which for a long time was a fence against the *Romans*; it hath on the East, *Moravia* and *Silesia*; on the South, *Austria*; on the West, *Bavaria*; and on the North, *Lusatia*. The whole Kingdom contains 550 miles in circuit; in which are said to be 780 Cities, walled Towns, and Castles, and about 32000 Villages. Its Inhabitants are much addicted to Drunkenness and Gluttony; but the Nobility and Gentry (for the most part) are of another temper. The Soil of the Kingdom is extremely fertile, and enriched with Mines of all sorts of Metal, except Gold. It is severed into 15 Provinces, and hath for its chief places, 1. *Prague*, the Metropolitan of the whole Kingdom (and seated in the midst, and on the River *Mulda*. This City consisteth of four several Towns, and every one of them have their peculiar Magistrates, Laws, and Customs; to wit, the Old *Prague*, beautified with a famous Senate-house, a large Market-house, and several fair Structures: then the New *Prague*, separate

separate from the Old by a deep and broad Ditch; also the little Town, so called, which is divided from the Old *Prague* by the *Mulda*, to which it is joyned by a fair Bridge. In this City is the Hill *Rachine*, on the sides of which are many beautiful Houses inhabited by the Nobility; and on the summit thereof is a magnificent *Palace*, and is the residence of the *Bohemian* Kings, and later Emperours; the fourth and last part is the Town of the *Jews*, as by them inhabited, where they have five Synagogues, and live according to their own Laws. 2. *Cohn*, 3. *Jaromirz*, 4. *Cburdin*, 5. *Hora*, 6. *Tabor*, 7. *Pisen*, 8. *Ziatecz*, 9. *Rakonick*, 10. *Melnisk*, and 11. *Nimburg*; all places of good account.

The Provinces incorporate to *Bohemia*, are the Duchy of *Silesia*, the Marquisates of *Moravia* and *Lusatia*.

SILESIA is Eastwards of *Bohemia*, and is severed into two equal parts by the River *Oder*, which hath here its beginning; it is divided into three *Dutchies*, fifteen *Principalities*, and four *Baronies*, whose names (with their chief places) I have taken notice of in the *Geographical Table of Bohemia*. Its chief places are 1. *Breslaw*, so called from a Duke of this Province, who built it: In the year 1341 it was totally burnt, but since the rebuilding is become one of the neatest Towns in this part. 2. *Gros-glogaw*, 3. *Jawer*, 4. *Lignitz*, 5. *Breslaw*, 6. *Breig*, 7. *Monsterbeg*, 8. *NeiB*, 9. *Oppelen*, 10. *Ratibor*, 11. *Troppaw*, and 12. *Wartenberg*.

Duchy of
Silesia.

The Marquisate of *MORAVIA*, West of *Bohemia*, is esteemed the most fertile Country for Corn in *Germany*, abounding also in *Myrrhe* and *Frankinsinc*, not growing on Trees, but out of the ground: It is severed into three parts, viz. *Olmütz*, *Brinn*, and *Znaim*; and hath for its chief places 1. *Brinn*, dignified with the Seat of the Marquis. 2. *Olmütz*, seated on the *Morava*, from whence the Country takes its name, and is dignified with an University. 3. *Iglaw*, 4. *Znaim*, 5. *Kremsir*, 6. *Krumlow*, and 7. *Polina*; all places of good account.

Marquisate of
Moravia.

The Marquisate of *LUSASIA*, South of *Bohemia*, is divided into the Higher and Lower *Lusatia*; a Country, though but little, yet able to Arm 40000 foot. It hath for its chief places, 1. *Baudissen*, 2. *Gorlitz*, 3. *Sittaw*, 4. *Soraw*, and 5. *Guben*.

Marquisate of
Lusatia.

The County of *Glatzko*, and the Signiory of *Egra*, belong likewise to the Kingdom of *Bohemia*.

S A X O N Y.

The Lower part of *Germany*, about the *Elbe* and *Oder*, is taken up by *Saxony*, which is divided into the Higher and Lower; in the higher are the Estates of the Dukes of *Saxony*, the Estates of the Marquisate of *Brandenburg*, and the Duchy of *Pomerania*. In the Lower *Saxony* are several Archbishopsricks, Bishopsricks, Dutchies, and Imperial Cities; which I have taken notice of in the *Geographical Table of Germany* about the *Elbe* and the *Oder*.

Saxony, with
its parts.

The Higher *SAXONY* for the most part belongs to the Duke and Elector of *Saxony*: It is bounded on the East with *Lusatia* and *Brandenburg*, on the South with *Bavaria* and *Bohemia*, on the West with *Hassia* and *Frankonia*, and on the North with Lower *Saxony* and *Brandenburg*. It is divided into the Duchy of *Saxony*, the Marquisate of *Misia*, the Duchy of *Voitland*, *Turinge*, with its several parts, and the Principality of *Anhalt*. The chief places in the Duchy of *Saxony* are 1. *Wittenberg*, seated on a plain and Sandy barren ground, once dignified with the Seats of the Dukes of *Saxony*, famous for the Sepulchers of *Luther* and *Melancthon*; it is dignified with an University, and of this Town there is a common Proverb, That a man shall meet nothing but Schollers, Whores, and Swine; which last is their food: and 2. *Worlets*, seated on the *Albis*.

Higher Saxony,
and its parts.

Province of
Misne.

The Province of *MISNE* hath for its chief places 1. *Dresden*, seated on the *Albis*, the residence of the Duke, and Prince Elector of *Saxony*; it is a place of great strength, having on its Walls and Bulwarks 150 Pieces of Ordnance, being the *Dukes* Magazin for Arms and Men, where, upon a days warning, he can make ready 30000 Horse and Foot. 2. *Lipsick*, seated in a fruitful Plain for *Corn*, a fair Town, graced with large Streets, and beautified with many lofty Buildings of *Freestone*, and is of some account for its University for the study of *Philosophy*; and it is observed, that these *Philosophers*, amongst other Secrets in nature, find *Beer* so good, that the Duke gains by the Custom thereof, drunk by them and the Inhabitants, who follow their steps, about 20000 *l. per annum* sterling.

Dutchy of
Voitland.

The Dutchy of *VOITLAND* is of no large extent, and of as little note; its chief places are *Altembourg* and *Zuickau*.

Province of
Turinge.

The Province of *TURINGE*, about 120 miles in length and breadth, is divided into several parts, and hath for its chief places 1. *Erdford*, a fair and large City; 2. *Jever*, an University of *Physicians*; 3. *Smalcald*, famous for the *Lutheran* League here made, in *Anno* 1530, by the *German* Princes, which in a short time was propagated over all *Christendom*. 4. *Cobourg*, 5. *Quedelimberg*, 6. *Salsfeld*, 7. *Mulhausen*, and 8. *Northausen*; which two last are *Imperial Cities*.

Anhalt.

The Principality of *ANHALT* hath for its chief places *Dessau* and *Bernbourg*.

Marquise of
Brandenbourg.

The Marquise of *BRANDENBOURG*, East of *Poland*, is in compass about 520 miles, is separated into the parts of *Altmark*, *Mittle*, *Marche*, and *Newmark*; its chief places are 1. *Havelberg*, situate on the River *Havel*, the Seat of a Bishop. 2. *Brandenbourg*, which communicates its name to the Country. 3. *Berlin*, seated on the River *Spre*, the ordinary residence of the Marquis. 4. *Frankfort*, seated on the *Oder*, to distinguish it from the other on the *Meine*, and in a fertile Soil for *Corn* and *Wine*; it is dignified with an *University* and a great *Mart Town*, but not comparable to the other *Frankfort*, and 5. *Landsberg*.

Province of
Pomerania.

The Province of *POMERANIA*, South of *Brandenbourg*, is divided into nine Dutchies, whose names are set down in the *Geographical Table*. Its chief places are 1. *Stettin*, the residence of the Prince, which from a poor *Fisher Town* is now become the chief of the Country. 2. *Walgass*, once a famous *Mart Town*, where the *Russians*, *Vandals*, *Danes*, and *Saxons*, had their particular Streets of abode for Trade; but now it is lost, and from thence removed to *Lubeck*. 3. *Gripsswald*, an University; 4. *Straelsund*, 5. *Bergen*, 6. *Stargart*, 7. *Colberg*, 8. *Stolpe*, and 9. *Lowenbourg*. That part of the Country about *Stettin* belongs to the *Swede*, and that towards *Colberg* to the Marquise of *Brandenbourg*.

Lower Saxony
with its parts

The *Lower SAXONY* is divided into the *Archbishopricks*, *Bishopricks*, divers *Dutchies*, with some *Imperial Cities*, the names of all which are set down in the *Geographical Table* of *Saxony*. In this *Lower Saxony* are divers good Towns and Cities, the chief of which are 1. *Magdebourg*, a City which gives name to its Territory. 2. *Breme*, which also gives name to its Territory or Archbishoprick, is one of the *Hans-Towns*, so called from the freedom of Traffick here used; it is commodiously seated on the *Visurge*, which runneth through the City, and at five miles distance falleth into the Sea. 3. *Ferden*, 4. *Hiddelheim*, 5. *Halberst*, which three last are all Cities which give name to their Territories or Bishopricks. The several Dutchies are *HOLSTEIN*, or *HOLSATIA*, where are the Cities of *Kyell*, *Siegelberg*, and *Gluckstad*.

Dutchy of
Lunenburg.

The Dutchy of *LUNEBOURG* hath for its chief places 1. *Lunenburg*, said to be so called from the *Moon*, which the ancient Inhabitants worshipped; it is an *Imperial* and *Free City*, of good strength, being well fortified with thick *Mud walls* and deep *Ditches*, and its Buildings are fair; a place well known for its *salt* *Mountain* here found, over which is built a spacious

spacious House containing 52 Rooms, in every one of which are placed eight Chaldrons of *Lead*, in each of which are boiled a Tun of *Salt* every day; the profit of which is divided into three parts, one to the *Duke*, another to the *City*, and the other to the *Monastery*, and some adjoining *Earldoms*. And 2. *Celle*, the Seat of the Duke of *Lunenburg*.

Dutchy of
Brunswick &c.

The Dutchy of *BRUNSWICK* hath for its chief places 1. *Brunswick*, seated in a fertile Soil for *Corn*, a free *Imperial City*, strongly fenced about with Walls, besides the River of *Ancor*, which encompasses it; this place is famous for its *Mum*, which the Inhabitants are so much addicted unto, that they commonly spend the Forenoons about their Affairs, and the Afternoons in good Fellowship. 2. *Wolfenbitten*, the Seat of the Dukes of *Brunswick*.

The Dutchy of *GRUBENHAGEN*, whose chief place is *Limbeck*.

The Dutchy of *GOTTINGEN*, whose chief place is *Gotttingue*.

The Dutchy of *LAWENBOURG*, whose chief places are *Lawenbourg* and *Hadler*.

The Dutchy of *MECKLENBOURG*, West of *Pomerania*, hath for its chief places 1. *Wismar*, so named from *Wisamarus*, a King of the *Vandals*, Father of *Rhadaguse*, who, with *Alarick* the *Goth*, sacked *Rome*. 2. *Rostock*, an University; and 3. *Scierin*.

Amongst the *Imperial Free Cities*, or *Hans-Towns*, which are about 72, most of which are seated on the Sea-shoar, or navigable Rivers, enjoying large Immunities, and able to put to Sea about 100 Sall of *Ships*; these following are of most note. 1. *Lubeck*, seated on the *Trane*, which on the North-side divides *Germany* from *Denmark*, and on a spacious Hill, on the top whereof is a beautiful *Church*, from whence lead Streets to all the Gates of the City, besides which there are nine other *Churches*; it is encompassed with a double Wall, one of *Brick*, and the other of *Earth*, and in some parts deep *Ditches*, where Ships of about 1000 Tuns are brought up to Winter from *Tremuren*, its Maritim-Port, seated on the *Baltick Sea*, from which it is about a miles distance. The Buildings of this City are of *Brick*, and very beautiful, to which they have many pleasant *Gardens*; and the Inhabitants are to be commended for their civility to Strangers, as also for their strictness in the execution of their Justice. 2. *Hambourg*, seated on a large and Sandy plain, and on the banks of the *Albis*, where it divides *Germany* from *Denmark*; it is a strong City, encompassed with a deep *Ditch*, and on the East and North-sides with a double *Ditch* and *Wall*, and hath six Gates for entrance, the Haven being shut up with *Iron-Chains* and strictly guarded: It is adorned with many fair buildings, as the *Senate-house*, the *Exchange*, &c. hath nine *Churches* for Divine Worship, and its private Houses are for the most part neatly built; it is very populous, well inhabited, and frequented by Merchants, especially by the *English*, who have here a *Factory* for *Woolen-Cloth*. In this City there hath been observed to be 777 *Brewers*, 40 *Bakers*, one *Lawyer*, and one *Physitian*; the reason of this great disproportion (as one wittily observed) was, that a Cup of *Nimis* is the best Vomiting potion, and their Controversies were sooner composed over a Pot of *Drink*, than by order of *Law*. 3. *Stoad*, commodiously seated for Traffick on the *Elve*, about five miles distance from *Hambourg*, once a place of a better Trade than now it is. These Cities are called *Free*, from their great Prerogatives in coynning Money, and ruling by their own Laws; and *Imperial*, as knowing no Lord or Protector, but the *Emperour*, to whom they pay two Thirds of such Contributions as are assessed in the Assemblies.

Germany is a spacious Country, and very populous; the People are of a strong Constitution and good Complexion, are very ingenious and stout, much given to drink, but of a generous disposition: the Poorer sort great Pains-takers, and the Nobles (which are many, for the Title of the Father descends to all their Children) are either good *Scholars* or stout *Souldiers*, so that a Son of a Duke is a Duke; a thing which the *Italians* hold so vain and foolish, that in derision they say, That the Dukes and Earls of *Germany*, the

Dons of *Spain*, the Nobility of *Hungaria*, the Bishops of *Italy*, the Lairds of *Scotland*, the Monarchs of *France*, and the younger Brethren of *England*, make a poor Company.

There are so many inferiour, (yet free) *Princes* in this Country, that in a days journey a Traveller may meet with many *Laws*, and as many sorts of *Coin*, every Prince making use of his own *Laws* and *Coins*, whose *Laws* the *Emperours* are sworn to keep; which made one say, that the *Emperour* is *King of Kings*, the *King of Spain* *King of Men*, and the *King of France* *King of Asses*, as bearing his heavy Taxes.

The Country is generally fertile and temperate, being situate under the *Temperate Zone*. Here are many Mines of *Silver* and other Inferiour *Mettals*; it hath store of *Corn* and *Wine*, which they transport to forreign Countries, as likewise *Linnen*, *Laces*, *Woollen*, and divers *Manufatures*, also *Quicksilver*, *Alom*, *Arms* of all sorts, and other *Iron-works*; and its *Ponds*, *Lakes*, and *Rivers* are well stored with *Fish*.

The chief Rivers of *Germany* are, the *Rhine*, the *Weser*, the *Elbe*, and the *Oder*; for the *Danube* having but a small course in this Country, shall be elsewhere spoken of.

That part which we call *BELGIUM*, or the *Low Countries*, is of a large extent, seated in the *North Temperate Zone*, under the 8 and 9th *Climates*, the longest day being 17 hours; the *Air* by reason of the industry of the Inhabitants in draining the *Marishes*, and turning the standing-Waters into running-Streams, is now very healthful, as being purged from those gross Vapours which did thence arise: the Country lieth exceeding low, and therefore subject to Inundations. The Commodities that these Countries yield, are, *Linnens*, *Larn*, *Thread*, *Sayes*, *Silks*, *Velvets*, *Tapestries*, *Pictures*, *Prints*, *Blades*, *Sops*, *Butter*, *Cheese*, *Fish*, *Pots*, *Bottles*, *Ropes*, *Cables*, *Armour*, several *Manufatures*, &c. besides the Commodities of *India*, *Persia*, *China*, *Turkey*, and other parts, which are here had in great plenty, by reason of the vast Trade they drive in all parts.

The fertility and Commodities of Germany.

Its chief Rivers.

The Commodities and Trade of Belgium.

The

The Kingdom of POLAND, as it is divided into the

Higher, or Little POLAND; where are the Palatinates of

Lower, or Great POLAND; where are the Palatinates of

POLAND, under the name of which is comprized,

Divers Dutchies, with their Castlewicks, to wit

PRUSSIA, or PRUSSE; as it is divided in

Dutchy of LITHUANIA, under the name of which are comprized,

And divers other Estates, Dutchies, &c. united, or subject to the Crown of POLAND, viz.

Dutchy of VOLHYNIE, as it is divided in the

Part of MOSCOVIA, where are

RUSSIA NOIRE, which is esteemed in the Higher Poland; where are the Palatinates of

CUJAVIA, which is esteemed in the Lower Poland; where are the Palatinates of

MAZOVIA, also esteemed in the Lower Poland; where are the Palatinates of

PRUSSIA ROYALE; where are the Palatinates of

PRUSSIA DUCALE, with its Palatinate and Castlewicks of

LITHUANIA; where are the Palatinates of

POLESIE, where is SAMOGITIE, with its Palatinate and Castlewicks of

Higher VOLHYNIE, with its Palatinate of

Lower VOLHYNIE, with its Palatinate of

Higher PODOLIE, as Lower PODOLIE, as

The Dutchies of

Cracow, with its Castlewicks of

Sandomir, with its Castlewicks of

Lublin, with its Castle

Pozna, where are the Castlewicks of

Kalisz, with its Castlewicks of

Sirad, with its Castlewicks of

Lencin, with its Castlewicks of

Dobrzin, with its Castlewicks of

Ploetz, with its Castlewicks of

Rava, with its Castlewicks of

Leowenborg, or Leopold, with its Castlewicks of

Belz, with its Castlewicks of

Brzest, with its Castlewicks of

Uladislaw, with its Castlewicks of

Czestok, with its Castlewicks of

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POLAND

P O L A N D.

Poland, and
its parts.

THE Estates of the Crown of Poland ought to be considered in two sorts, the one called the *Estates of POLAND*, and the other of *LITHUANIA*; these two having heretofore had their *Kings* and *Dukes* apart, and not having been united till within about 270 years. The *Estates of Poland* shall be, *Poland*, which we will divide into the Higher and Lower, or Lesser and Greater; and into the Dutchies of *Russia Noire*, *Cajavia*, *Mazovia*, and *Prussia*. The *Estates of Lithuania* may be divided into *Lithuania*, *Volhinia*, *Podolia*, &c. all Dutchies; but *Lithuania* much the greater; wherefore he who possesseth them is entituled the Great Duke of *Lithuania*.

Its extent.

All these Estates of *Poland* and *Lithuania* taken together, extend from about the 48th degree of Latitude unto the 57th, which are about 225 French Leagues; and from the 38th of Longitude unto the 61, and have near as much Continent again as *France*. They are bounded on the East for the most part by *Moscovy*, and part of the *Petit Tartars*; on the South the Mountains of *Caprack* and the River *Neisser* divide them from *Hungaria*, *Transylvania*, and *Moldavia*; on the West by *Germany*, and touch in part on the *Baltick Sea*; and on the North they are bounded part by *Livonia*, and *Moscovy*.

Bounds.

Ancient Inha-
bitants.

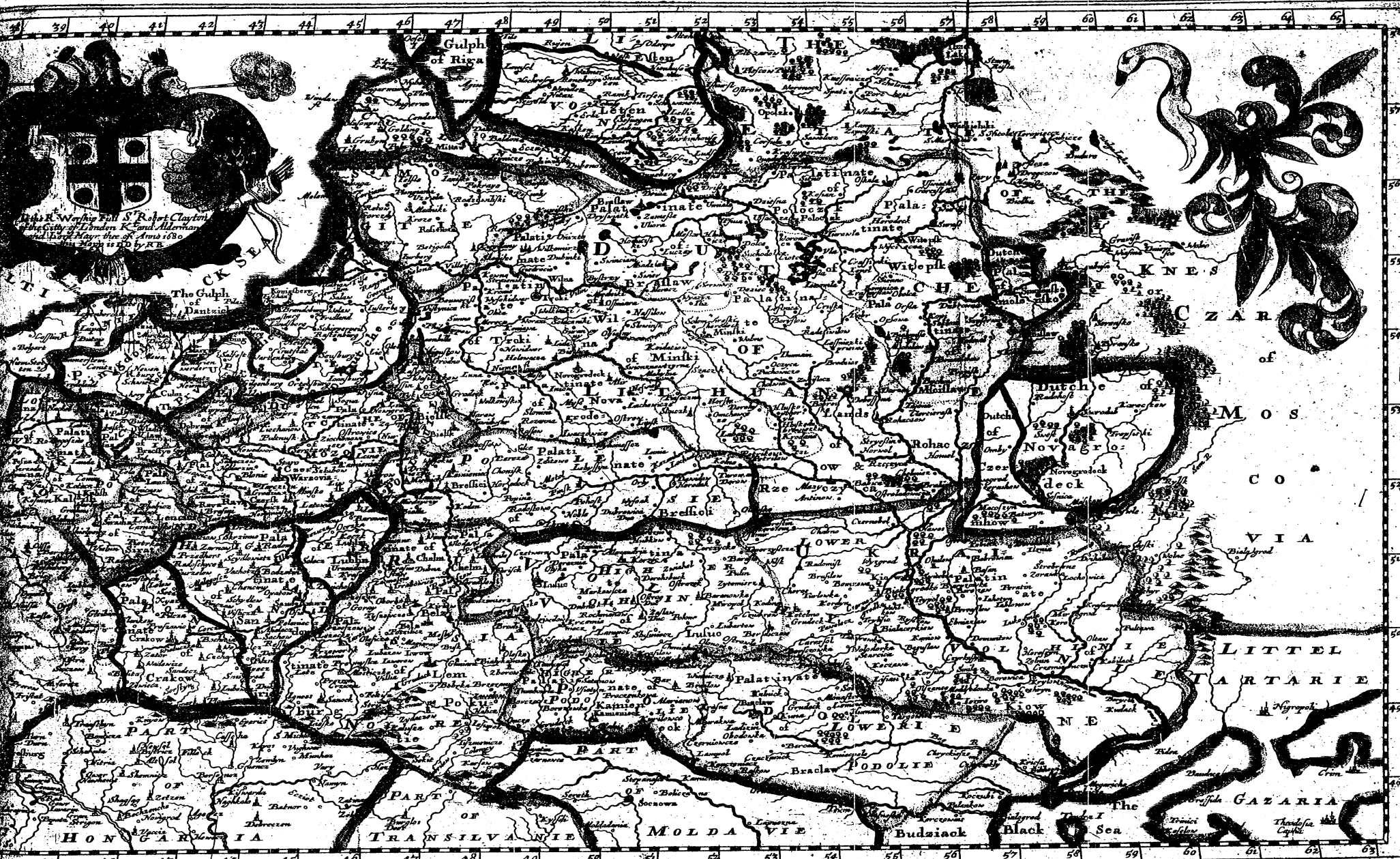
The Ancient name of *Poland* was *Sauromatia*, from its Inhabitants the *Sauromatae*; afterwards by *Lechius*, the first Duke hereof, in Anno 550, it was called *Poland*, which signifies a plain Country, as generally it is. It was made a Kingdom by the Emperour *Otho* the Third, Anno 1000, *Boleslaus* being Duke, and hath ever had its *Dukes* and *Kings* elected by the States; who, by reason of their vicinity to the *Turks*, generally chuse a *Warriour*.

Fertility,
Commodities,
&c.

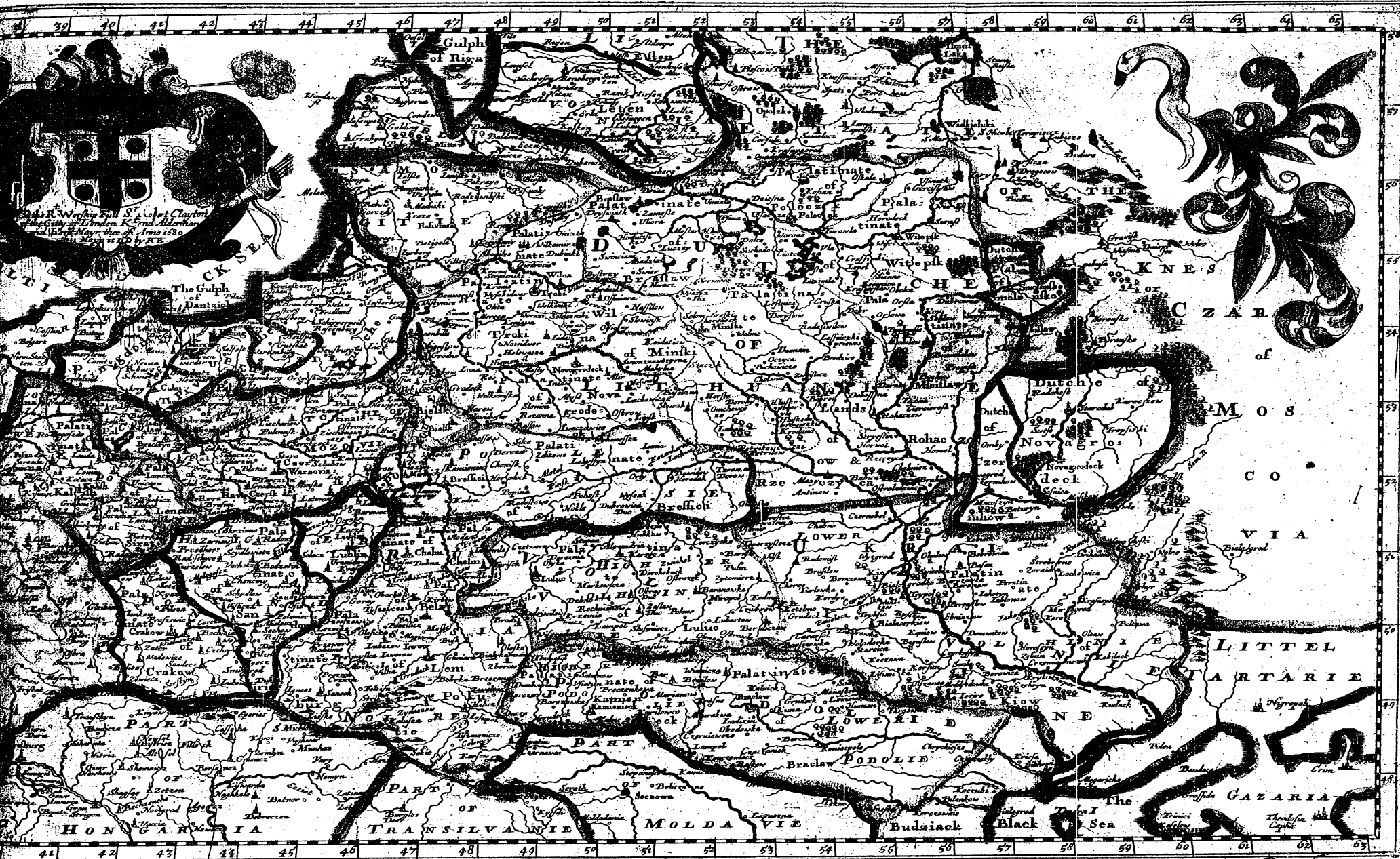
The Country is plain, well clothed with *Firs* and other *Timber-Trees*; the Air is so cold, that they have neither *Wine* nor *Grapes*, instead of which, having store of *Barly*, they make use of the Old drink of *England*, viz. *Ale*. The Country is well furnished with *Grains* and *Fruits*, but they are but lean; their chief Commodities are rich *Furs*, *Horses*, *Hony*, *Wax*, *Bow-staves*, *Buff-hides*, *Ambergreece*, *Flax*, *Linnen-cloth*, *Masts*, *Cordage*, *Boards*, *Wainscot*, *Timber*, *Rozin*, *Tar*, and *Pith* of both kinds, *Match*, *Iron*, *Stock-fish*, *Salt* digged out of the Earth, *Pot-ashes*, *Rye* in great plenty, for which it hath made *Dantzick* famous. It is well furnished with *Flesh*, *Fowl*, and *Fish*; and towards the *Carpatian Mountains* of *Hungaria* are found Mines of *Gold* and *Silver*, as also *Iron* and *Brimstone*.

Its People.

The People are ingenious, and much addicted to Languages, especially *Latin*; there being scarce a man, though of a mean condition, but understand it: according to their abilities, they are more inclined to prodigality than penuriousness; as for the *Gentry*, they are free, but the *Peasants* are no better than *Slaves*, being under subjection to their Lords. They are esteemed good *Souldiers*, are proud, much given to costly Apparel and delicious Diet; they use the *Slavonian Language*: in matters of Religion they are said to embrace all, so they have any thing of *Christianity* in them; some following the Reformed Churches, some embracing the Doctrine of *Calvin*, others of *Luther*, and some of *Augustine*, *Bohemian* and *Helvetian* Confessions, and others



P of the ESTATES of the CROWNE of POLAND, where are the KINGDOM of POLAND withits Palatnates the DUTCHES of RUSSIA-NOIRE CUVAVIA MOZOVIA PRUSSIA
VOLHYNIA PODOLIA. &c. Designed by Monsieur Sanjon Geographer to the French King.



P. of the ESTATES of the CROWNE of POLAND, where are the KINGDOM of POLAND withits Palatinates the DUTCHES of RUSSIA NOIRE CUJAVIA MOZOVIA PRUSSIA
VOLHYNIA PODOLIA. &c. Designed by Monsieur Sanfon Geographer to the French King.

others are of the Church of Rome, which doth occasion the Saying, *That he that hath lost his Religion, let him seek it at Poland.* Written Laws they have but few, if any, *Custom and Temporary Edicts* being the Rule both for their Government and Obedience.

The Revenue of the King is not great for so large a Country, and that which is, he receiveth from them quarterly, the Kingdom being divided into four Parts, every one of which keepeth the King and Court a quarter; which Revenue is not certain, but more or less according to his occasions, by War, Marriage of his Daughters, or the like.

The Kingdom is divided throughout into *Palatinates* and *Castlewicks*. Poland, taken particularly, is divided into the Higher and Lower; in the Higher are the *Palatinates* of *Cracou*, *Sandomirz*, and *Lublin*. Places of most note in these parts are 1. *Cracou*, or *Cracovia*, seated in a Plain, and on the Banks of the *Vistula*, dignified with the residence of the King: It is in form round, the Houses fair and lofty, and built of *Freestone*; in the midst of the City is a large *Quadrangle Market-house*, where is seated the *Cathedral Church*, and the *Senate-house* for the Citizens, about which are several Shops for Merchants. The City is encompassed with two strong *Stone Walls*, and a dry Ditch; on the East-side of the City is the Kings *Castle*, being fair, well built, and pleasantly seated on a Hill, as also the Kings and Queens Lodgings; on the West is a *Chappel* where the Kings are interr'd, and on the North-side Lodgings for Entertainment and Feasting; the South-side being without Buildings: but as to matters of Trade, this City is of small account.

Also *Sandomirz* and *Lublin*, both chief Cities of their *Palatinates*, are in the higher *Polonia*, or *Poland*.

In the Lower Poland are the *Palatinates* of *Posna*, *Kalisch*, *Sirad*, *Lentini*, *Dobrzin*, *Ploczk*, and *Rava*; whose chief Cities or places bear the same name, and are the residence of their *Palatines*. Besides which there are several other Towns of good note, which are taken notice of in the *Geographical Table* of the Kingdom, and in chief *Posna* and *Gnesna*, dignified with the See of an *Archbishop*, who during the *Interregnum* of the King, holdeth the Supreme Authority in the Kingdom, and summoneth the *Diets*.

To Poland doth also belong the Dutchies of *Russia*, *Noire*, *Cujavia*, *MAZOVIA*, *Prussia*, and *Polaquie*.

RUSSIA NOIRE hath for its chief places *Loewenberg* and *Bekz*, both chief of their *Palatinates*.

CUJAVIA hath for its principal places *Brzefti* and *Uladislaw*, both chief of their *Castlewicks*.

MAZOVIA hath only one *Palatinate*, viz. *Czersk*, under which is comprised several *Cities* and *Castlewicks*, the chief of which is *Warsaw*, one of the fairest in the Kingdom, it oft-times being the residence of the Kings of Poland, a place noted for its excellent *Metheglin* here made.

PRUSSIA is considered in two parts, which are called *Royale* and *Ducate*: *Prussia Royale* is immediately subject to the Crown of Poland, and hath its *Palatinates* in the Cities of 1. *Dantzick*, seated on the *Vistula*, at its influx into the *Baltick Sea*, and at the foot of a great Mountain, which hangs over it; it is the fairest, best, and of the greatest Trade of any in *Prussia*. Through this City runs a River very commodious to the Inhabitants, whereon are many *Mills* for the grinding of Corn, which is here found in great plenty; as also a *Water-Mill*, for the conveyance of water in Pipes to their Houses; and by reason of its great Trade for Corn with *England* and other parts, they have a great many *Granaries* or *Store-houses* for the same, which is hither brought them from Poland. 2. *Elbin*, though but small, yet a fair City, and indifferently well frequented by the *English Merchants*. 3. *Marienburg*, the Seat of the Masters of the *Dutch Knights*; 4. *Culne*, and 5. *Thorn*, which though it hath no *Palatinate*, is esteemed by many next to *Dantzick*: *Prussia Ducate* belongs to the Marquess of *Brandenbourg*, who holds it from the Crown of Poland. It hath only one *Palatinate* at *Koningsberg*, seated on

The Revenue
of the King.

Poland, with
its parts and
chief places.

Lower Poland.

Russia Noire.

Cujavia.

Mazovia, with
its places.

Prussia.

on an Inlet of the *Baltick Sea*, and washed with the River *Pegel*; it is a fair City, a famous Mart, and a good University, and before its Coast is gathered great quantity of *Ambergreece*: This *Ambergreece* is the juyce of a Stone growing like *Coral* on a Rock in the North-Sea, continually covered with Water; and in the Months of *September* and *December*, by the violence of the Sea, is rent from the Rocks and cast into the Havens of the Neighbouring Countries.

Polazuit.

POLAQUIE is a small Province between the Estates of *Poland* and *Lithuania*, and seems to have belonged to *Mozavia*; *Bielsk* is the Seat of its *Palatinate*. And hitherto we have treated of the Estates of *Poland*, almost all on the *Vistula*, or the Rivers that fall into it, on which are seated the three fairest Cities of these Quarters, *viz. Cracow*, towards its Spring; *Warsaw*, towards the middle of its course; and *Dantzick*, towards its principal Mouth falling into the Sea.

Estates of
Lithuania.

The Estates of *LITHUANIA* are East of *Poland*, and about the River *Neiper*; they are divided into the *Palatinates* of *Wilna*, *Braslaw*, *Troki*, *Minsk*, *Novogrodeck*, *Polosczyk*, and *Vitepk*. Its chief places are *Wilna*, an *University*, and the *Premier Palatinate*; the other principal places bear the name of its *Palatinate*, and are of some account.

Poliste.
Samogitie.

The Quarter of *POLESIE* hath for its chief place *Bressli*. *SAMOGITIE* hath no *Palatinate*, and hath for its chief place *Rossenie*, whose Houses are built with Mud and Straw walls.

Volhynie.

The Dutchy of *VOLHTNIE* is divided into the Higher and Lower, and hath the *Palatinates* of *Lusuc* and *Kiovia*; its chief places bear the names of their *Palatinates*.

Podolie.

The Dutchy of *PODOLIE* is also divided into the Higher and Lower, and hath the *Palatinates* of *Kamieniec* and *Braslaw*, whose chief places bear the same name.

The Turks and
Swedes possessors
of some
parts of Po-
land.

The *Turks* are possessed of *Oczacou* in the Lower *Podolia*, and on the *Black Sea*; likewise of *Dassau* in the Lower *Volhynia*, and on the *Borysthenes*. The *Swedes* have likewise, within these few years, taken all *Livonia*; the Dutchy of *Curland*, wherein is the City of *Mittau* remaining only of that Province under the protection of the Crown of *Poland*; and moreover the *Vayvode* of *Moldavia*, and sometimes likewise he of *Valachia* renders some Duties to *Poland*. In *Lithuania* are divers Dukedoms, as of *Slusk*, *Neswies*, *Birga*, &c. whose Princes are powerful and have great Priviledges. The Dukedoms of *Smolensko* and *Novogrodeck*, which are of a great extent, and run all along the Coast of *Lithuania*, towards *Moscovia*, belong at present to the Crown of *Poland*, although part of *Moscovy*.

The principal Rivers in *Poland* are the *Vistula*, the *Niemen*, the *Dovine*, the *Neiper* or *Borysthenes*, and the *Neyster*; most of which are very considerable for largeness, fairness, and swiftness of Stream.

SCANDI-

SCANDI-
NAVIA,
which with
the Penin-
sula's and
Isles about
it, are the
Estates of

SWEDEN;
which com-
prehendeth
the Regions
of

DANE-
MARK;
whereof the
principal
parts are

The Peninsula of JUT-
LAND, as it is di-
vided into four Bisho-
pics and two Dut-
chies; to wit,

Ripen,
Arhusen,
Alborg,
Wiborg,

Sleswick,

Holstein, or Holface,

Divers ISLES, the
chief of which are

Seland, or Zeland,

Fuinen,
Falster,
Gotland,
Osel,

The Coast of GOTH-
LAND; where are
the Provinces of

Halland,

Blekinge,

Scöner, or Scanja,

NORWAY,
which con-
sisteth of

Five Governments in
SCANDINAVIA,
viz.

Bahus,

Aggerhus,

Eergenhus,

Tronheimhus,

Wardhus,

And divers Lands and
Isles, in the Northern
Sea, and in AMERICA
Artick, the chief of
which are

Groneland,

Izland Isle,

Farre Isle,

Upland,

SUEONIE, with its
Provinces of

Westermannie,

Dalecarlie,

Nericie,

Sundermannie,

NORTH LAND,
with its Parts of

Gestrie,

Hellinge,

Medelpapie,

Angermannie,

Bothnie,

LAPPONIE,
or Lapland,
in part, to
wit,

Vina-Lapmarck,

Lula-Lapmarck,

Torne-Lapmarck,

Kimi-Lapmarck,

OSTRO-GOTH LAND,
with its Provinces of

Ostro-Gothland,

Smalandie,

Oeland Isle,

GOTH-
LAND, or
Gothie,
whose parts
are

WESTRO-GOTH-
LAND, with its Pro-
vinces of

Westro-Gothland,

Dalie,

Vermeland,

FINLAND,

Finland,

And Provinces united to
FINLAND, as

Cajanie,

Savolaxie,

Tavastie,

Nyland,

Carelle,

Kexholm,

INGRIA, which cannot be divided into Provinces,

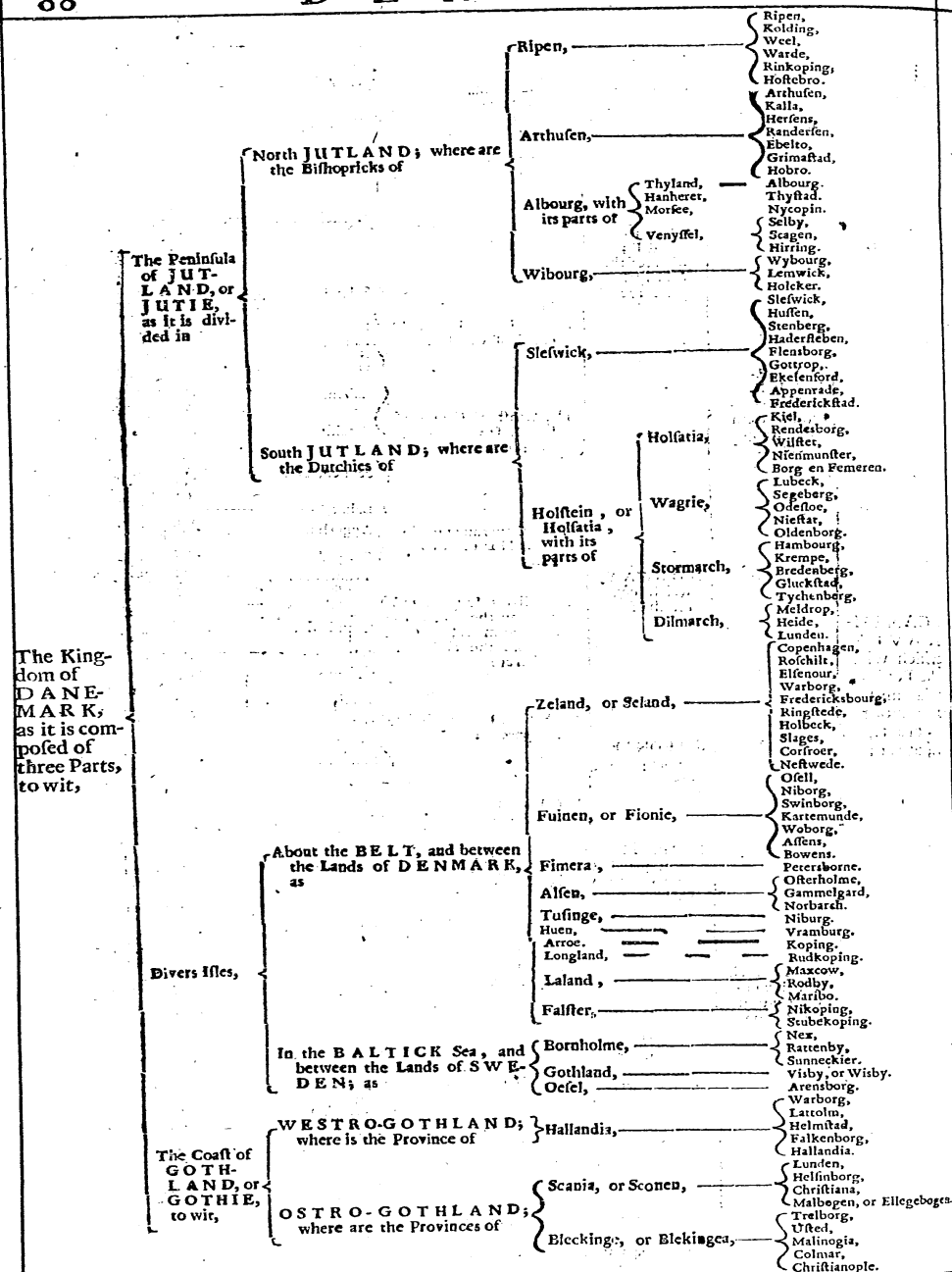
LIVONIE, whereof the part belong-
ing to Sweden, may be divided into

Esten,

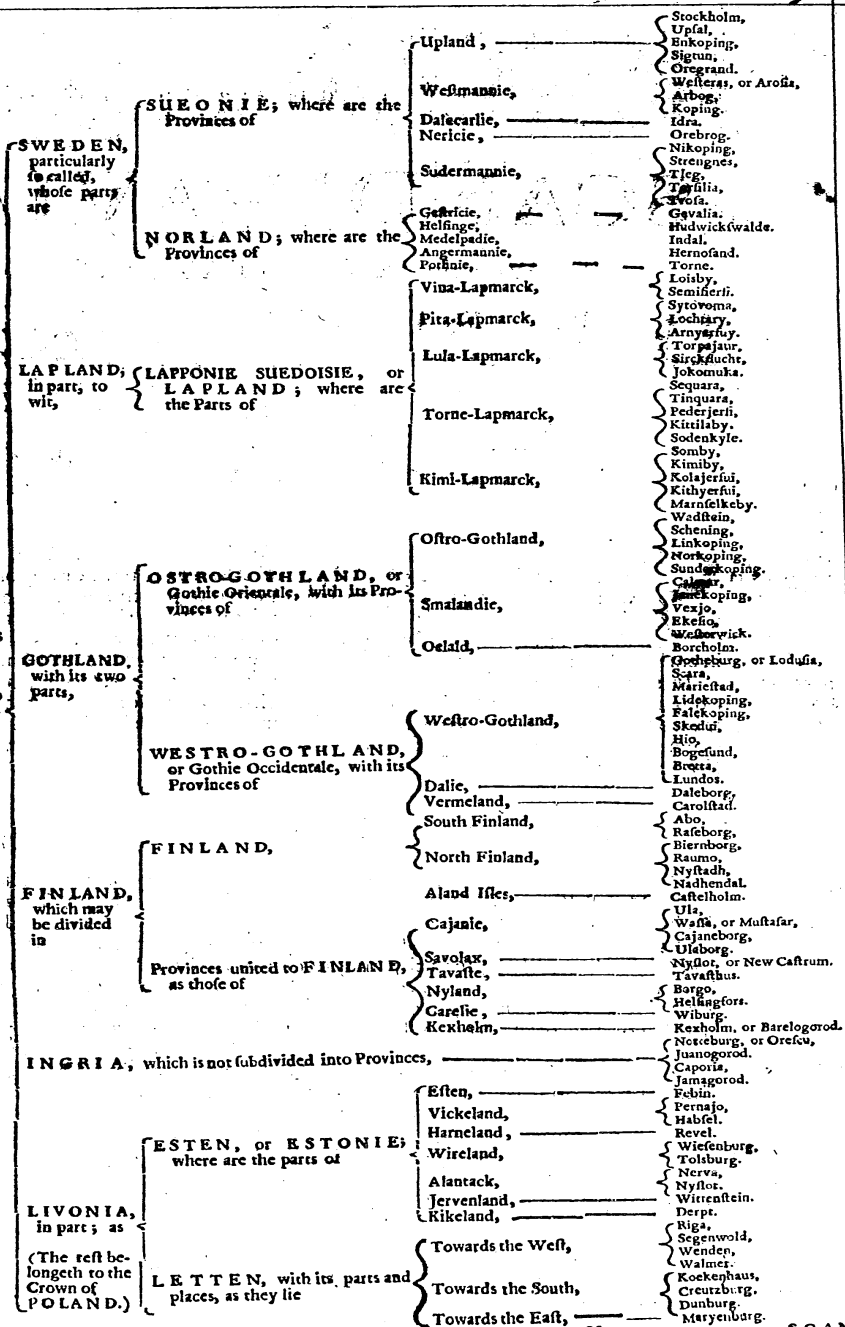
Letten,

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SCAN.

SCANDINAVIA,

Wherein are the ESTATES of

DENMARK

AND

SWEDEN.

The extent,
bounds, &c. of
Scandinavia.

SCANDIA, or SCANDINAVIA, is only a *Peninsula*, which extends it self from the 56th degree of *Latitude*, unto or beyond the 71, which are near 400 Leagues from North to South; and from the 26th degree of *Longitude* unto the 45th on the *Baltick Sea*, and on the *Ocean* unto the 53; but this Mass of Land cannot have in its greatest breath above 150 Leagues, finishing in two points towards South and North.

Its situation,
&c.

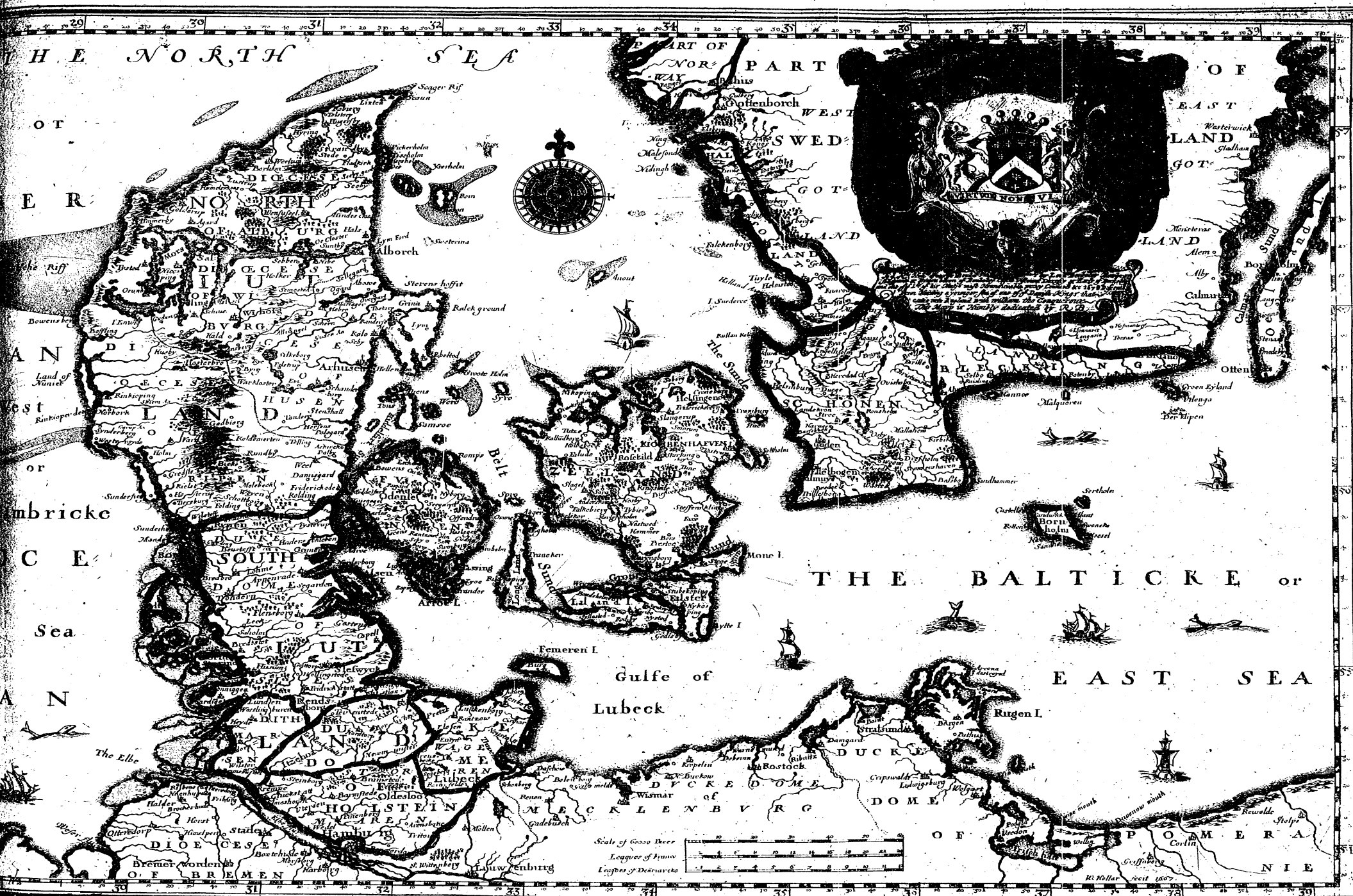
It is bounded on the North and West by the *Northern Ocean*, and on the South and East by the *Baltick Sea*; a continual Chain of Mountains dividing it into two almost equal parts, of which one is on the *Baltick Sea*, and the other on the *Ocean*; this possessed by the King of *Denmark*, the other by the King of *Sweden*.

DENMARK.

Its Commodities.

THE Estates of DENMARK contain two Kingdoms, to wit, DENMARK and NORWAY. *Denmark* is between the *Ocean* and the *Baltick Sea*, composed of a *Peninsula* contiguous to *Germany*, and of a *Coast* contiguous to *Sweden*; and of divers *Isles* which are between the *Peninsula* and *Coast*; some likewise in the middle of the *Baltick Sea*, and near *Livonia*. It is situate partly in the *Northern Temperate Zone*, and partly within the *Artick Circle*, extending from the 55th degree of *Longitude*, or the middle Parallel of the 10th *Clime*, where it joyneth to *Germany* as far as 71 degrees, where it is bounded by the *Frozen Ocean*, the longest day in the most Southern parts being 17½ hours; but in the most Northern parts they have no Night for almost three Months: whereas on the other side, when the *Sun* is in the other *Tropick*; and most remote from them, they have no Day for the like time. This Country is very cold, and consequently not over fertile, nor affording good *Fruits*. The Commodities that this Kingdom affords are *Fish*, *Hides*, *Tallow*, *Furniture for Shipping*, as *Pitch*, *Tar*, *Cordage*, *Masts*, &c. also *Firr*, *Boards*, *Wainscot*, several sorts of *Armour*, &c.

The



MAP OF THE KINGDOME OF DENNMARKE, WITH ITS SEVERALL DIOCESES OR PROVINCES, DESIGNED BY MONSIEUR SANSON.

The Inhabitants for the most part are of a good *stature* and *complexion*, very healthful, ingenious, and of a ready wit, very punctual in performing their *Promises*, proud and high conceived of their own worth, lovers of Learning, as may appear by those Famous men it hath bred, *viz. Tycho Brahe*, the great Mathematician; *John Cluverus*, the renowned Philosopher and Physician; *Godfrey Gottricus*, that stout Warriour, who not only settled the Government of this Kingdom, but also shook the Realm of *France*; likewise *Waldemare*, *Christiern* the Second, and Fourth; *Canutus* and *Sueno*, which two last were the Conquerors of *England*. They are great punishers of Offenders, especially *Theft* and *Piracy*; their *Women* are of a comly grace, very fair, and as fruitful in Children; discreet and sober.

The Peninsula called *JUTLAND*, once *Cimbria Chersonesus*, from the *Cimbrians* its ancient Inhabitants: It is divided into North and South *Jutland*.

North *JUTLAND* is severed into the Bishopricks of *Ripen*, *Arhusen*, *Albourg*, and *Wibourg*.

RIPEN contains 30 *Prefectures* or *Herets*, (as they term them) 7 *Cities* or walled *Towns*, and 10 *Castles*. Its chief places are 1. *Ripen*, seated near the *German Ocean*, the chief place of the *Diocess*, and dignified with an *Episcopal See*: 2. *Kolding*, seated on a Creek of the *Baltick Sea*; 3. *Weel*, 4. *Warde*, &c.

ARTHUSEN containeth 31 *Prefectures*, 7 *Cities* or walled *Towns*, and 5 *Castles*. Its chief places are 1. *Arhusen*, seated on the *Baltick Sea*, having a commodious and well frequented *Port*, and dignified with an *Episcopal See*. 2. *Kalla*, a strong place, seated in a large Bay, reaching two Dutch miles to the high Hill of *Elemanberg*; opposite to which lie the Isles of *Hilgones*, *Tuen*, *Samsøe*, *Hiarneo*, and *Holm*, &c. 3. *Horsens*, 4. *Randerjen*, 5. *Ebelto*, and 6. *Hobro*.

ALBOURG, which is divided into four parts, *viz. Thyland*, whose chief Town is *Albourg*, seated on the Bay of *Limford*, which, opening into the *Baltick Sea*, extendeth it self through the main Land, almost to the *German Ocean*. 2. *Hanebert*, on the North-west of *Limford* Bay, containeth 4 *Prefectures*, and hath for its chief place *Thylstad*. 3. *Morsee*, lying on the *Ocean*, contains 3 *Prefectures*, the Isle of *Ageroe*, the Town of *Nicopin*, and the Castle of *Lunstead*: and 4. *Vensyssel*, according to *Mercator*, *Vandalorum sedes*, or the Seat of the *Vandals*, contains 6 *Prefectures*, 3 *Towns*, and 1 *Castle*, *viz. Selby*, *Cagen*, and *Hirring*.

WIBOURG contains 16 *Prefectures*, the Isles of *Egholm*, *Hansholm*, *Bodum*, *Idgen*, *Cisland*, and *Ostholm*; also it hath 3 *Castles*, and as many *Cities* or walled *Towns*; *viz. 1. Wibourg*, dignified with an *Episcopal See*, and the *Courts* of *Judicature* for both the *Jutlands*. The point of *Scagen*, or *Seean*, ends this *Peninsula* towards the North. 2. *Lemwick*, and 3. *Holcker*.

South *JUTLAND* is divided into the Dukedoms of *Sleswick* and *Holstein*.

SLESWICK, a Country for the most part level, enriched with fertile Fields both for *Corn* and *Pasturage*; it is very well provided with good Bays on the *Baltick*, which are found commodious for Merchants. The chief places in this Dukedom are, 1. *Sleswick*, seated on the *Slea*, which falls into the *Baltick*, where it hath a commodious and well frequented Haven; it is a fair Town, the chief of the Dukedom, and honoured with an *Episcopal See*. 2. *Hussen*, seated on the *German Ocean*: 3. *Sternberg*, the ordinary residence of the Governour for the King of *Denmark*; 4. *Haderleben*, seated on a navigable In-let of the *Baltick*, and fortified with a strong and fair *Castle*: 5. *Flensborg*, seated on the *Baltick* amongst high Mountains, having a *Port* so commodious and deep, that Ships do lade and unlade close to their Houses: and 6. *Gottrop*, where there is a strong Fort belonging to the Duke of *Sleswick*, seated at the end of a large Bay of the *Baltick*, or note for the *Custom-house* or *Toll-booth* there, erected for Cattle, sent out of these parts into *Germany*.

H O L

Dukedom of
Holstein.

HOLSTEIN, or **HOLSATIA**, a woody, low and Marshy Country; is severed into the Parts of *Holsatia* especially so called, *Wagrie*, *Stormarch*, and *Dilmarch*.

HOLSTEIN, or **HOLSATIA**, hath for its chief places, 1. *Kiel*, seated on a navigable Arm of the *Baltick*, where it hath a large Haven, being a Town of a good Trade. 2. *Rendesborg*, said to be the strongest Town in all the Province; 3. *Wistled*, and 4. *Nienmunster*.

WAGRIE hath for its chief places, 1. *Lubeck*, an Imperial and free City, enjoying the privileges of a *Hans-Town*; it is pleasantly seated on the confluence of the *Billew*, and on the North-banks of the *Trane*, severing it from *Germany*, and empty themselves into the *Baltick*, being capable to receive *Ships* of a great burthen, which they lade and unlade at *Tremuren*, the Maritim Port, at about a miles distance; it is built on all sides upon a rising Hill, on the Summit whereof is placed a fair and beautiful Church called *St. Maries*, being the Cathedral, from whence, on an easie descent, there are Streets which lead to all the Gates of the City, which afford a fair prospect to the Eye; besides which, it is adorned with 9 other Churches, one of which being a decayed Monastery, is converted to an *Armory* to keep their Ammunition for War. It is about 6 miles in compass, encircling within its Walls divers fair and uniform Streets, beautified with good *Brick-buildings*, is very populous, and well inhabited by *Citizens* and *Merchants*, who drive a considerable Trade on the *Baltick Seas*. But this City, as also *Hamburgh*, is esteemed rather part of *Lower Saxony* in *Germany*, where I have also treated of them. 2. *Segeberg*, 3. *Odesloe*, 4. *Niestad*, and 5. *Oldenborg*.

STORMARCH hath for its chief places, 1. *Hambourg*, an ancient City built by the *Saxons*, since made an *Imperial City*, enjoying the Privileges of a *Hans-Town*, seated on the North-banks of the *Albu*, which divides it from *Germany*, of which it is reckoned a part or member; and there treated of in the description of the *Lower Saxony*, to which I refer the Reader. 2. *Kremppe*, seated on a River of the same name, which emptieth it self into the *Store*; a strong and well fortified Town, being reckoned for one of the Keys of the Kingdom. 3. *Bredenberg*, a Town of great strength, belonging to the *Rantzovs*: 4. *Gluckslade*, seated on a Bay or Creek of the *German Ocean*, and therefore well fortified, to command the passage up the *Elbe*: and 5. *Tychenberg*, seated on the *Elbe*, being so well fortified, that it is now held the strongest Town in this Kingdom.

DILMARCH or **DITMARCH**, hath for its chief places, 1. *Meldrop*, seated on the Sea; a place of some account, and the chief of the Province. 2. *Heide*, and 3. *Lunden*, a Haven Town, seated on the *Eider*, which rising in this *Peninsula*, here emptieth it self into the *Ocean*.

The B A L T I C K I S L E S.

These Islands which are between *Jutland* and the Coast, and farther in the *Baltick Sea*, are in number 35, and are so called, as being dispersed in these Seas. The *Baltick Sea* begins at the narrow passage called the *Sound*, and interlacing the Countries of *Denmark*, *Poland*, *Germany*, and *Sweden*, extendeth to *Livonia* and *Lithuania*. The reason (according to the Opinion of many) why this Sea, which is so large, doth neither ebb nor flow, may be as well from its Northern situation, whereby the *Celestial* influences have the less predominancy, as also from the narrowness of the *Stright*, which receiveth the *Ocean*. The chief of these *Isles* I have set down in the *Geographical Table* of this Kingdom, of which a word or two, and first with *Zeland*.

ZELAND.

ZELAND, anciently *Codanonia*, from the *Codani* its Inhabitants; the Isle is very fertile, the greatest and of most importance of any in the *Baltick*, to the King of *Denmark*, as lying not above three miles from the main Land of *Scandia*, which narrow Streight is called the *Sound*, through which all Ships must pass that have any Trade into the *Baltick*, all paying to the said King a certain Toll, according to the bigness or Bills of Lading, by which ariseth a great Revenue unto him; and for the security of this passage there are built two exceeding strong Castles, the one in this Isle, called *Cronenberg*, and the other in *Scandia*, called *Hilsemberg*, of which more anon. In this Isle are 7 strong Castles, and 13 Cities or walled Towns; the chief of which are 1. *Copenhagen*, or *Hassien*, the chief of the Isle, seated near the Sea, having a commodious Port; it is built orbicular, of a good strength, being defended by a powerful Castle; its Houses are but meanly built, yet it hath a spacious Market-place, and is dignified with the residence of the King for the Winter season; whose Palace is built of *Freestone* quadrangular, but of no great splendor, as also with the only *University* in the Kingdom. 2. *Elfenour*, seated on the Sea side; of it self but a poor Village, were it not for the great resort of Sea-men in their passage through the *Sound* into the *Baltick*, this being the place where they pay their Toll; and in this Village is the stately and well fortified Castle of *Cronenburg*, built in the very Ocean, and bravely resisting the fury of its Waves; now the ordinary residence of the King, being a pleasant prospect into the Sea; on the South-side of this Castle is a large and commodious Road for Shipping. 3. *Roschilt*, once a rich City, now only famous for being the Sepulchre of the *Danish Kings*, where, in the Cathedral Church, they have their Tombs; it is also dignified with the See of a Bishop. 4. *Fredericksbourg*, a Fortrefs built in a pleasant Plain, often visited by the King in his retirement, where he hath a delightful House seated in a Park. 5. *Warborg*, 6. *Ringstede*, 7. *Holbeck*, 8. *Stages*, &c.

FUINEN, or **FIONIE**, seated betwixt *Zeland* and *Jutland*, and almost joyning to the Main-land; it is of a fertile Soil, and pleasant situation, being in length about 12 Dutch miles, and 4 in breadth. Its chief places are 1. *Oslo*, or *Ottomium*, so called from *Otho* the Great, who founded here an *Episcopal See*, seated in the midst of the Isle, from which the other Towns are of an equal distance, which renders it very commodious for Traffick; it is not large, having but two Churches, and its Buildings are neat and ornamental enough. 2. *Nisborg*, 3. *Swinborg*, 4. *Kartemunde*, 5. *Woborg*, and 6. *Ascens*; all, or most of them seated on some convenient Creek or Haven.

FIMERA, a very fertile and well peopled Isle; and here it was that *Tycho Brache*, the famous Mathematician, built an Artificial Tower; in which are (or were) many rare *Mathematical Instruments*; its chief place is *Petersborne*, of some importance to the King of *Denmark*.

ALSEN, a small Isle appertaining to the Dukedom of *Sleswick*; is very populous, contains 13 Parishes, and 4 Towns, viz. *Osterholme*, *Gammelgard*, *Norbarch*, and *Sunderburg*; dignified with the residence of the Duke of *Sleswick*.

TUSINGE, a very small Isle, and of no great account by reason of its dangerous situation; its chief place is *Nisburg*.

ARROE, a small Isle belonging to the Duke of *Sleswick*; it contains three Towns, the chief of which is *Koping*, fortified with a Castle so called.

LONGLAND, an indifferent long Isle, but not very broad; its chief place is *Rudkoping*, of some account.

LALAND, not far distant from *Zeland*, abounds in *Corn* and *Chestnuts*, freighting therewith many Vessels yearly; it is very populous for the bigness, contains 3 Towns, viz. *Maxcow*, *Rodby*, and *Maribo*; besides a great many Villages and some Castles.

FALSTER, a small Isle, fertile in *Corn*, seated near to *Laland*; its chief places are *Niskoping*, of a pleasant situation; and *Stubekoping*.

In

Bornholm.

In the *Baltick*, and between the Lands of *Sweden*, are also several *Isles* the chief amongst which are *BORNHOLME*, seated not far from *Gothland*, an Isle very fertil, feeding abundance of Cattle: It hath many good Towns and Villages, the chief of which are, *Nex*, *Rottonby*, and *Suomneckier*.

Gothland.

GOTH LAND, an indifferent large Isle, in form round and narrow, now in the possession of the *Swedes*: It yields *white Marble*, excellent for building; the City of *Wisby*, seated in the midst of the Isle, was once so famous for Traffick, that it gave Maritime Laws to the *Baltick Sea*.

That which the King of *Denmark* possesses, as particularly belonging to the Crown, on the Coast of *Scandinavia*, is part of the ancient *Gothland*; the most Southern of which that we are now treating of, is divided into *Westro-Gothland* and *Ostro-Gothland*; which are again subdivided into the Provinces of *Hallandia*, which takes up *Westro-Gothland*; and into the Provinces of *Scania* and *Blecking*, which takes up *Ostro-Gothland*; and first of *Hallandia*.

Hallandia.

HAL LANDIA, now in the possession of the *Swedes*; this Country of Province for fertility of Soil, sweetness of Air, store of *Fish*, plenty of *Lead* and *Brass Mines*, and thickness of *Towns* and *Villages*, which are well inhabited, is not inferior to any. Its chief places are 1. *Warborg*, seated on the Sea-shoar, and defended by a strong Castle, built on the summit of a Hill, so that it hath a great command over the Country. 2. *Labolm*, 3. *Helmstad*, 4. *Falkenborg*, and 5. *Hallandia*, or *Katterop*.

Scania.

SCANIA, or *SCONEN*, hath on the North *Hallandia*, and on all other parts, the *Sea*; also now in the *Swedes* possession: It is about 70 miles long and 48 broad; the pleasantest Country in all *Denmark*, most abundant in *Fruits*, and richest in *Merchandise*, and on the Sea-side are sometimes such great shoals of *Herrings*, that they are found troublesome to Vessels. Its chief places are 2. *Lunden*, an Inland City, dignified with the sole or Metropolitan Archbishop of *Denmark*; the chiefest beauty in this City is the *Cathedral Church*, a magnificent Structure, beautified with excellent pieces of Art, the chief whereof are the *Clock* and the *Dial*: the *Clock* being so composed by Artificial Engines, that whensoever it striketh, two Horsemen give one another as many blows as the *Clock* striketh times: also upon the opening of a Door there is represented a Theatre, where the *Virgin Mary* is seated on a Throne with *Christ* in her Arms, to whom the three *Kings*, with their several Trains, come in order, and with reverence present their Gifts to her, during which time two *Trumpeters* continually sound. And next the *Dial*, which sheweth the year, month, week, day, and hour of the day throughout the year, as also the motions of the *Sun* and *Moon* through each degree of the *Zodiack*; the moveable and fixed *Feasts*, &c. are to be distinctly seen, being neatly set forth in variety of delightful Colours. 2. *Helsingborg*, fortified with an impregnable Castle, and one of the Forts defending the *Sound*: 3. *Christiana*, a place of great strength; and 4. *Malbogen*, a Port-Town, opposite to *Copenhagen*.

Bleckinge.

BLECKLINGE, also belonging to the *Swedes*, hath on the East and South the *Baltick Sea*: It is a Mountainous and barren Country, and hath for its chief places 1. *Malinogia*, the Birth-place of the famous Mathematician *Gaspar Bartholinus*, who was said to be the inventor and maker of the afore said *Clock* and *Dial*. 2. *Golmar*, an important Fortress against the *Swedes* until they gained the Province.

The Soil of *Denmark* is naturally better for *Pasture* than *Tillage*, and feedeth such multitude of *Oxen*, that at least 50000 are said to be yearly sent hence to *Germany*. Their other Commodities are *Fish*, *Tallow*, *Furniture* for Shipping, *Armour*, *Ox-hides*, *Beck-skins*, *Wainscot*, *Fir-wood*, *Furrs*, *Pipe-staves*, *Copper*, *Wheat*, *Rye*, &c.

A General Mapp of Scandinavia Where are y^e States and Kingdomes of Denmarke Norwage. and Sweden by Montieur Sanson

the Re. W^{orshipfull} S^t. Thomas
 of Ellham and Henry
 of the parish of North
 who was R^{ector} K^{ing}
 this map by R.B.

SEPTENTRIONAL or GLACICK NORWAY OCEAN

Ils of Orkney
 Sownd I
 Dunefhe head
 Catnes
 ephartne?
 Philorth Caft:
 Aberdore
 Red head
 S^t Abs head
 Barwick
 Enmouth haven



N O R W A Y.

THe Country of *NORWAY* is bounded on the North with *Lippia*, on the East with the *Dofrine* Mountains, which divide it from *Sweden*, and on all other sides with the *Sea*; on which, with a disproportionate breadth, it stretches its Coasts for 1300 miles in length. The Country is extremely cold, being partly under the *Frozen Zone*, and partly so near it, that it all suffers under the inclemency of bitter Colds. It is for the most part Mountainous, full of vast Woods, and of a Soil so barren and ungrateful to the Husbandman, affording so little *Corn*, that on many places the people live on dried *Fish* instead of *Bread*, (known to us by the name of *Stick-fish*;) but the richer sort of people buy *Corn* of such Merchants as come to Trade with them. The principal Commodities that this Country affordeth, is great plenty of *Firrs*, *Deal-boards*, *Timber*, *Tar*, *Masts*, and Furniture for *Shipping*, also *Stock-fish*, *Train-oyle*, rich *Furrs*, *Copper*, *Pipe-staves*, &c. which the Inhabitants exchange for *Corn*, *Cloths*, *Kerseys*, *Lead*, *Tinn*, *Stockings*, &c.

The Country is exceedingly annoyed with certain small Beasts about the bigness of a *Mouse*, by them called *Leimners*, which at a certain time are so innumerable, that like *Locusts* they devour all the verdure of the Earth, and at a certain time die in heaps, which proves very noisom to the people, infecting the Air; and the Sea is as bad troubled with *Whales*. The Inhabitants are said to be just Dealers, punishers of *Theft*, and other Vices, and were accounted formerly great Warriors.

This Kingdom is divided into five Governments, which take their names from the places where the Governours reside; in all which the *Towns* are exceeding thin, and the *Houses* as poor. The five Parts are as followeth.

BAHUS, belonging to the *Swedes*, is the most Southward; the chief places are *Bahus*, the residence of the Governour, to which are subject the Towns of *Congel*, seated on the Sea, and of *some Trade*; and *Murstrind*, seated in a *Demi-Island*, of note for the great quantity of *Herrings* here caught.

AGGERHUS, mounting towards the North, whose chief place or Castle is so called, to which these Towns following are subject, *Opflow*, or *Aslusi*, dignified with an *Episcopal See*, as also with the Courts of Judicature. 2. *Schon*, of good account for its *Copper* and *Iron Mines*; and 3. *Friedrichstad*.

BERGENHUS, or *BERGEN*, whose chief place is so called, dignified with an *Episcopal See*, and the residence of the Governour, once a famous City of Trade, and one of the ancient Mart-Towns of *Europe*; yet still, by reason of its situation at the bottom of a deep Arm of the Ocean, called (by them) *Carmesant*, where it hath a commodious Port, is well frequented by Merchants, who bring them *Corn*, *Bread*, *Wine*, *Beer*, *Apparatus*, and the like Commodities, to supply their wants; and in exchange take *Stock-fish*, *Furrs*, *Deals*, *Firrs*, *Cordage*, *Pitch*, *Masts*, &c.

TRONTHEIMHUS, or *TRONDENHUS*, whose chief place and Castle, where the Governour resideth is so called; it is dignified with the Metropolitan *Archbishoprick* of all *Norway*, once a fair City, as being the Seat of their Kings, till the *Danes* became Masters of this Country, who have reduced this City to a small Town.

WARDHUS, seated beyond *Cape Norr*, which is the most Northern point of *Europe*. Its chief place and Castle, where the Governour resideth, except during the absence of the *Sun*, which is for about three Months in the year, is so called. This Town is serviceable to the Kings because it was the *Luppians*; their Neighbours, as also commandeth the Natives; and profitable, because all the *Ships* going to *Moscow*, must of necessity touch here.

Its situation, temperature, fertility, Commodities, &c.

Norway divided into five Governments, viz.

Bahus.

Aggerhus.

Bergenhus.

Trontheimhus.

Wardhus.

N

To

To the *Norwegian King* do belong divers *Lands* and *Isles* in the Northern Sea, and in *America Artick*; the chief of which are *Groenland*, *Island*, *Farre*, &c. which I shall treat of in the Description of *America*.

S W E D E N.

The Estates of the *Swede* are all on the *Baltick Sea*, and take up all those Regions which are on the West, East, and North of this Sea, and is Southwards of *Poland*, *Germany*, and *Denmark*.

The Estates of the *Swede* are bounded on the West and North by the Estates of *Denmark*, on the East by those of *Moscovy*, and on the South by the *Black Sea*, *Poland*, and *Denmark*; they comprehend six principal Regions, viz. *Sweden*, *Lapland*, *Gotthland*, *Finland*, *Ingra*, and *Livonia*.

SWEDEN, particularly so called, is divided into the parts of *Sueonie* and *Norland*, in both which are several *Provinces*, which are taken notice of in the *Geographical Table of Sweden*: It is bounded on the East with *Sinus Bodicus*, on the West the *Dofrine Hills*, and on the South *Gotthland*. The Country is very fruitful and delicious, unless in some places, occasioned by the cragginess of the Mountains, the great *Marishes* yet undrain'd, and the vast Woods yet standing. The places of most note in this part are 1. *Stockholm*, seated in a watry *Marish*, in part upon the Lake *Meller*, and in part on the East Sea, out of which the great Trade for *Shipping* to this City doth come, its Port being capacious and safe; which is defended by two powerful *Fortes*, as also the City by an impregnable *Castle*, well furnished with *Ammunition*. This City being the residence of the King, as the *Metropolitan City*, (whose *Palace* is more renowned for its Antiquity than Magnificence) makes it to be a place of a considerable Trade, and well frequented. 2. *Upsal*, seated not far from the Bay of *Bodner*, dignified with a See of an *Archbishop*, as also with an *University*, and beautified with a *Cathedral Church*, no less large than fair, formerly the Burial place of the *Swedish Kings*. 3. *Nikoping*, a Maritime Town, of good strength. 4. *Coparhel*, famous for its abundance of *Braß*. 5. *Westeras*, or *Arosia*, of note for its rich Mines of *Silver*, which are exceeding profitable to the King. 6. *Hudwickswalde*, seated on the Sea or Gulph of *Baltie*. 7. *Oxsbrog*, 8. *Gevala*, 9. *Indal*, 10. *Hernasund*, and 11. *Torne*.

LAPLAND is the most Northern part of *Scandinavia*; the People are barbarous, rude, void of *Arts* or *Letters*, great *Idolaters*, *Sarcorers*, and *Witches*, for which the place is famous, or rather infamous: of stature they are low, but strong and active, expert in the Bow, with which they kill their wild *Beasts* in hunting, eating the *Flesh*, and clothing themselves with the *Skins*, which they tie about them to preserve them from the pinching Cold.

Lapland is divided into five parts, viz. *Vina-Lapmark*, *Pita-Lapmark*, *Luha-Lapmark*, *Torne-Lapmark*, and *Kimi-Lapmark*; and these parts are but thinly beset with Towns, contenting themselves with *Sheds* and *Cabins*, which they remove from place to place as occasion serveth. Its chief places I have set down in the *Geographical Table of Sweden*.

GOTTHLAND is divided into *Ofstro-Gotthland* and *Westro-Gotthland*, that is, the Land of the Eastern and Western *Goths*; and these two parts are subdivided into several *Provinces*, viz. *Ofstro-Gotthland*, *Smalandie*, and *Oelald*, in the first part; and *Westro-Gotthland*, *Dalie*, and *Vermeland* in the other parts. This is the richest and best Province of the North, and very fertile in *Corn* and *Cattle*; in it is the famous Lake *Wenir*, or *Wenest*, which receiving 24 Rivers, disburthens it self at one Mouth, and with such noise and fury, that it beareth the name of the *Devils-head*. The places of most note in *Ofstro-Gotthland* are

1. *Wadstein*, seated on a Lake; 2. *Calmar*, on the confines of *Denmark*, seated on the *Baltick Sea*, a large City, enjoying a good Trade, having a commodious Port, defended by a strong and beautiful *Castle*. 3. *Linkoping*, and 4. *Kexio*, both *Episcopal Seats*; 5. *Westerasick*, commodiously seated on the *Baltick Sea*. In *Westro-Gotthland* are the places of 1. *Gosheburg*, or *Ludus*, a Town of great Trade by reason of its fair and commodious Haven; 2. *Skara*, an *Episcopal See*; 3. *Daleburg*, a fair Town, well fortified with a strong *Castle*; and 4. *Cirpissad*.

FINLAND hath on the East *Sinus Finicus*, on the South the *Baltick Sea*, on the West *Sinus Bodicus*, and on the North *Bodinus*. The Inhabitants (according to *Tacitus*) are very barbarous and poor, being destitute of *Arms* (except *Bow* and *Arrows*), *Horse*, and *Horned goods*, contenting themselves with *Herbs* for their food, the *Skins of Beasts* for their clothing, and the *Ground* for their Bed; yet it is said to be very populous in Towns and Families; the chief amongst which are: 1. *Abo*, seated at the bottom of the Bay of *Finland*, which separates this Province from *Livonia*, dignified with the See of a *Bishop*. 2. *Bienborg*, 3. *Raumo*, 4. *Hadbendal*, and 5. *Castleholm*, in the Isle of *Aland*.

Provinces united to *Finland*, are: 1. *CATANIE*, whose chief places are *Abo*, *Wassa*, and *Cajaneborg*. 2. *SAVOLAX*, whose chief place is *Nisleri*. 3. *TAVASTE*, which hath for its chief place *Tavasthus*. 4. *NTLAND*, whose chief places are *Borgo*, a place of great strength, near to which (within the confines of *Moscovy*) are the two strong Frontier Towns of *Viburg* and *Rivallia*, the keeping of which stands the King of *Sweden* in 100000 *Dollars* yearly. 5. *CARELIE*, hath for its chief place *Wiburg*; and 6. *KEXHOLME*, whose principal place bears the same name.

Other Lands adjacent to *Finland*, are *Bodia* and *Scricksfinnia*. *BODIA*, hath on the South *Finland*, a Country not over fertile in *Grain* or *Fruits*; but in recompence hath great variety of wild *Beasts*, which afford great store of rich *Furs*. Its chief places are *Virtis*, *Visia*, and *Helsinga*, honoured with the Title of a *Dukedom*.

SCRICKFINNIA hath on the South *Bodia*, and thence stretcheth it self between *Lapland* and the *Frozen Ocean*; a Country miserably cold; they have no use of *Money*, but pay their Tribute to the King of *Sweden* in *Skins* and *Furs*, of which they have great plenty, which they take in hunting. Towns here are very thin, if any, and those that are on the Sea-shoar, and very poor, the Natives contenting themselves with *Cabbins* and *Sheds*.

INGRIA, a small Province bordering upon *Livonia*, at the bottom of the Gulph of *Finland*, not many years taken from the *Knez*, or great Dukes of *Mosco*, by the Kings of *Sweden*; who have likewise robbed *Germany* of the best part of *Pomerania*, and *Denmark* of the Provinces of *Schoonen*, *Scania*, *Hollandia*, *Blekingea*, *Babus*, *Gotthland*, *Oesilia*, *Heroedalia*, and *Jemptia*.

LIVONIA, bounded on the East with *Moscovy*, and on the West with the *Baltick Sea*; a Country extremely Mountainous and Fenny, but yet so fertile, that it supplies with *Corn* the defects of other Countries. It is severed into the parts of *ESTEN* and *LETTE*N, and these again into several other lesser parts, which are set down in the *Geographical Table*. Its chief places are *Felin*, *Pernajo*, *Revel*, *Wiesenburg*, *Nervia*, *Wittenstein*, and *Derpt*, a Town of good Trade. In the part of *LETTE*N, towards the West, are *Riga*, the See of an *Archbishoprick*, and is a place of a good Trade; *Segenwold*, *Wenden*, and *Walmer*. Towards the South are the Towns of *Kockenhaus* and *Creutzburg*; and towards the East the Town of *Marienburg*: All these Towns in the part of *Letten* are subject to the Crown of *Poland*.

In *Scandinavia*, or the Estates of *Denmark* and *Sweden*, are many *Rivers*, amongst which, some are large, but not famous: The *Lakes* and *Gulphs*, which are in great number, obscure the *Rivers*, and make the commerce only on the Coast. The Rivers of *Uma*, *Fitha*, *Lula*, *Torne*, and *Kimi*, give their names to the *Marishes* of *Laponia*, subject to the King of *Sweden*.

The Bounds of Sweden, with its parts.

Sweden.

Lapland.

Gotthland.

Finland.

United Provinces to Finland.

Lands adjacent to Finland.

Province of Ingra.

Lakes and Rivers.

M O S C O V I A,

O R

Russia Alba,

O R

B L A N C H E.

MOSCOVY, or *RUSSIA ALBA*, (so called to distinguish it from *Russia Nigra*, a Province in *Poland*) answers to the whole *Sarmatia* of the Ancients, which they divided into *Sarmatia Europæana* and *Sarmatia Asiatica*; the most Eastern part of *Moscovy* answering to this last, and the more Western to the former; and this distinction hath made some to esteem it partly in *Asia*, and partly in *Europe*; but it is by the generality esteemed all in *Europe*.

The whole Estate of the great Duke of *Moscovy* is of a larger extent than any other in *Europe*, stretching it self 5 or 600 Leagues in length and breadth, reaching from the 48th degree of *Latitude* unto the 70th or 72; and from the 50th of *Longitude* unto the 100th, and sometimes to the 110th.

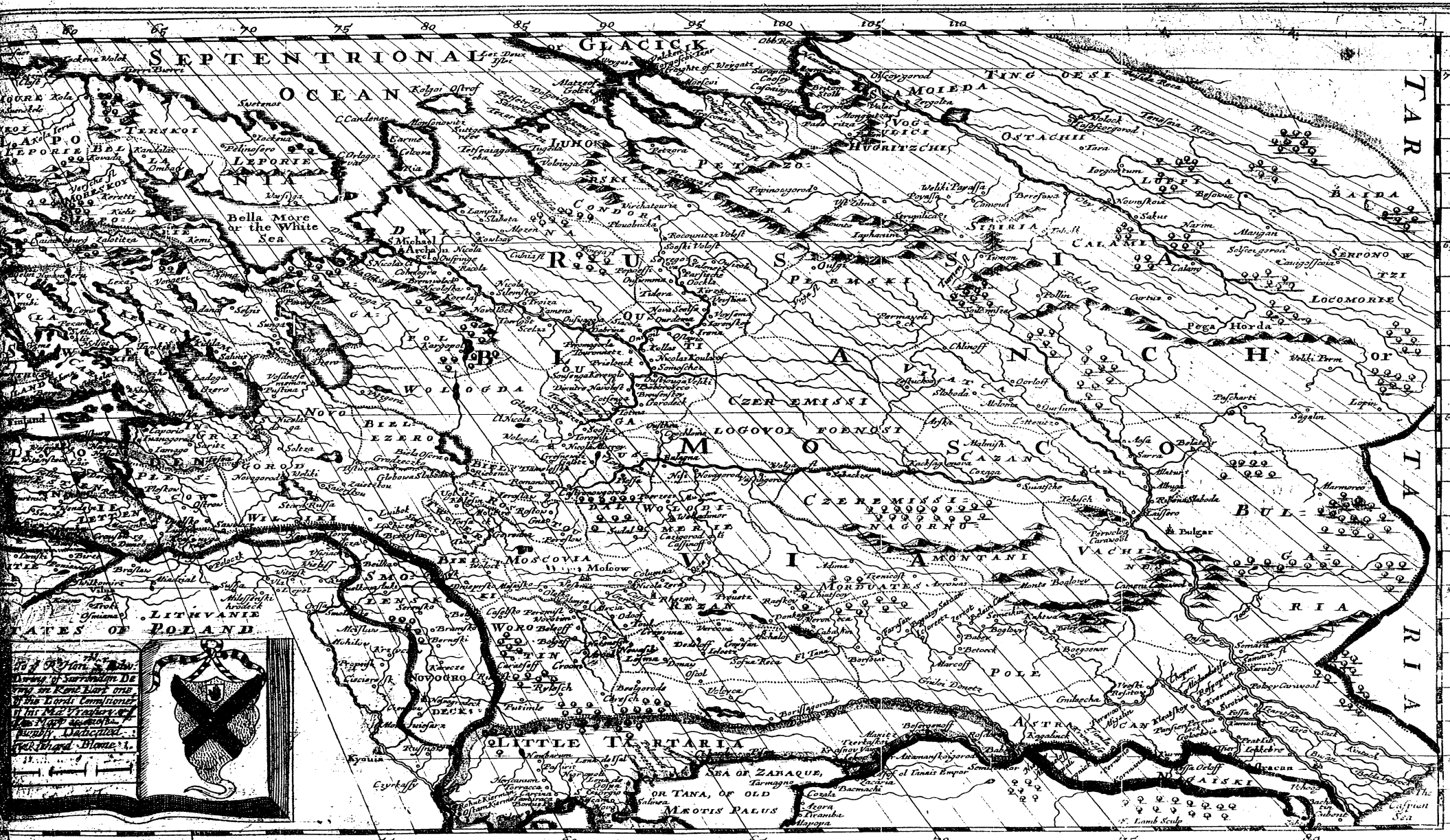
Moscovy hath its Estates bounded on the East by *Tartary*, and beyond the Rivers *Volga* and *Oby*; on the South, by the *Caspian* or *Euxine* Seas; on the North, by the *Septentrional* or frozen *Ocean*; and on the West, by *Norway*, the Estates of *Sweden* and *Poland*.

The Commodities that this Empire yieldeth are, rich *Furrs* of divers sorts, *Pot-ashes*, *Hemp*, *Flax*, *Honey*, *Wax*, *Cables*, *Tarn*, and other Cordage, *Fethers*; *Linnen Cloth* both coarse and fine, *Train-oyle*, *Rozin*, *Pitch*, *Caviare*, *Tallow*, *Iron*, *Salt*, *Sea-horse Teeth*, *Astracan-hides*, *Tann'd-hides*, *Raw-hides*, *dried-Fish*, great increase of *Grains*, with many other good Commodities; here are great store of *Cattle*, *Elkes*, *Stags*, *Bears*, *Wolves*, *Venison*, *Tigres*, *Linxes*, *Hares*, &c. great plenty of *Fowl* and *Fish*, common with us in *England*; and the Earth affordeth them plenty of *Fruits*, *Roots*, and *Herbs*.

The Air is exceeding sharp and piercing in the Winter, and subject to excessive great Frosts; but what with their warm clothing with *Furrs* and their *Stoves* in their Houses, they endure it well enough: and as their Winter is thus cold, their Summer is as hot and troublesome, the Sun being as it were above their Horizon.

The Country hath every where many *Lakes*, and those of as large an extent as any in *Europe*, as those of *Lodoga*, *Ouega*, *Biela*, *Osera*, *Ilmen*, and others towards the North; those of *Resanskoi-osera*, of *Iwanow-osera*, and others towards the South. Here are many *Forests*, among which the most renowned is that of *Epiphanow*, very well clothed with *Wood* and stored with

Its extent,
bonds, &c.Its Commo-
dities.Its Lakes,
Forests, &c.



APP OF THE ESTATES OF THE GREAT DUKE OF RUSSIA BLANCH OR MOSCOVIA. Designed by Mouton
n. Geographer to the French King

wild Beasts and Fowl. Mountains here are but few, except those of *Roglowi*, between the Rivers *Tana* and *Volga*; and those of *Camenopoj* or *Stolp*, that is, the Pillars of the World, which are between the *Dwine* and the *Oby*.

This Country (according to some) is called the *Mother of Rivers*; amongst which the *Volga*, the *Don* or *Tana*, and the *Dwine* or *Dwine*, are the most famous; and especially the *Volga*, which is the greatest and noblest in all *Europe*, both for its course and the force of its Water, running 7 or 800 Leagues, and receives abundance of other Rivers.

Moscow for the most part is ill Inhabited, and especially towards the North and East; these quarters being cold, full of *Forests*, and some of their People *Idolaters*; that which is towards *Sweden* and *Poland* is more frequented; more civiliz'd, and its *Cities* and *Towns* better built: that which lieth towards the South, and in all likelyhood should be the best, is partly *Mahometan*, and often infected by the *Perit Tartars*. But a word or two of its People about *Mosco*, which by reason of its being the residence of the Great Duke, are supposed to be the most civiliz'd and ingenious.

The People are naturally ingenious enough, yet they addict themselves neither to Arts or Sciences, but chiefly to Traffick and Husbandry, in which they are very subtle; they are observed to be great Liars, perfidious, treacherous, distrustful, crafty, revengeful, quarrelsome, proud, much addicted to Women and strong Drink; but *Tobacco* is forbidden amongst them. Their Houses are but mean, and as ill furnished, contenting themselves to lie on *Matts* or *Straw*, instead of *Beds*; they are gross feeders, yet have wherewithal to feed delicately. Their habit (which they seldom or never change) is much the same with the ancient *Greeks*, wearing long Robes of *Cloth*, *Sattin*, *Silk*, *Cloth of Gold* or *Silver*, which is beset with *Pearls*, according to the quality of the person, by which, together with their attendance, they are known; and under these Robes they wear close *Coats* and *Drawers*, begirting themselves with *Swashes*; on their feet they wear *Buskins*, and on their heads, *Caps* (instead of *Hats*) adorned with *Pearl* and *precious Stones*, which in their salutations they move not, only bow their bodies. They are for the most part fat and corpulent, esteeming great Bellies, and long and great Beards, for a comeliness; the Women, though indifferent handsome, yet make use of Paint. In the performance of their *Nuptial Rites* they use many Ceremonies, which are largely treated of by *Adam Olearius*, in his Book entitled the *Ambassadors Travels into Moscow and Persia*, whose description I shall make use of, wherein he saith; That young Men and Maids being debar'd the Society of each other, Maidens not being allowed the freedom of the Streets, or society with Men; it happens that no Marriages are made but by the consent of the Parents; and the bargain being agreed on by them, the Wedding-day is appointed, the Night before which the young Man makes his never yet seen Bride a Present, according to their Qualities. He saith further, that there are two Women appointed by them, who are to take order for the making the *Nuptial Bed*, &c. which is made upon about 40 sheaves of *Rye*, which are encompassed with a great many Barrels of *Wheat* and other Grains. All things being made ready, the *Bridegroom* late in the Evening goes to the *Brides*, accompanied with his Friends and Relations; together with the Priest who is to marry them, riding before them; and being received in, are brought to a Table where three Dishes of Meat are brought, but none eats thereof; then after some Ceremonies, the *Bride* is brought in richly clad in a fitting dress for that Solemnity by the said Women, who places her by the *Bridegroom*; and to prevent their seeing one another, besides the Vail over the *Brides* face, they are parted by a piece of crimson *Taffety*, which is held by two Youths; which done, the said Woman ties up her Hair in two knots, paints her, puts a Crown neatly made and gilded on her head, and habits her like a married Woman; the other Woman chosen by them paints the *Bridegroom*, and whilst this is doing, the Women get up on Benches and sing several Songs; then after several ridiculous Ceremonies they go to the Church; and before the

Rivers.

Moscow ill inhabited.

Its People.

Their Habit.

Their Ceremonies in Marriage.

the Priest gives them the *Benediction*, he carries them to the Offering; which consists of *sewed Meats, Fish, and Pastry*: the *Benediction* is given by holding *Images* over their heads; and the Priest taking the *Bridegroom* by the right hand, and the *Bride* by the left, and asks them three times, if they will love one another as Man and Wife ought, and whether it be by their consent; to which both answer, *Yes*: then all the People join hands and dance, whilst they and the Priest sing the 128 *Psalm*, which ended, he puts a Garland of *Rue* about their heads, saying, *Increase and multiply*; and then consummating the Marriage, saith, *Whom God hath joined together, let no man separate*; which being pronounced, several *Wax-Candles* are lighted, and the Priest is presented with a Glass of *Claret*, and being pledged by the Married couple, he throws down the Glass, and he and the *Bride* tread it under their feet, saying, *May they thus fall at our feet, and be trodden to pieces, who shall endeavour to sow discontent between us*. Then after several other Ceremonies, the *Bride* is put in a Sledge and drawn to the *Bridegroom's* house, where the Wedding is kept, and he following her on Horseback, and as soon as they are come, the said Woman conducts the *Bride* to her Chamber, undresses her, and lays her in Bed, during which time the *Bridegroom* and his Friends are seated at a Table well furnished with Meat; the *Bride* being laid in her Bed, the Woman fetches the *Bridegroom* from the Table, who is accompanied with about eight young Men, bearing in their hands lighted *Torches* to conduct him to the Chamber, which being entred, they put them in the said Barrels of Corn, and void the Room, being each of them presented with two *Martins-Skins*; the *Bride* perceiving him coming, gets out of the Bed, putting a Gown about her, and receives him very submissively; and this is the first time he hath the sight of her face: then they sit down at Table, and having eaten, go to Bed, all quitting the Room; and at the Door is placed one of the Old Servants, who is to demand, if the business is done; and when he saith, it is, the *Trumpets*, *Drummers*, &c. play, till such time as the Stoves are made ready, where they bath themselves, but apart, and the two next days are spent in dancing, entertainments, and diversions; but for *Citizens* and Persons of a meaner Degree, less Ceremonies are used, and with lesser state and cost. The Wedding being past, the *Bride* betakes her self to a retired condition, being not much permitted the liberty of the Streets, nor do their Husbands, especially the Richer sort, care they should be brought to *Houswifery*, so that they bestow their time in Idleness, and playing with their Maids; and, as some say, they are not well contented unless their Husbands gives them beating, being like *Spaniels*, the more they are beaten the better they love. *Divorcements* are frequent amongst them, for when they have a desire to part, they accuse her of *Adultery*, or want of *Devotion*, by suborning of false Witnesses, by which they are contented, without answering for themselves.

Their Religion.

Their Religion is the same with the *Greek Church*, of which they are a Member, but full of Superstition, as considering the *Virgin Mary*, the *Evangelists, Apostles*, with abundance of other *Saints*, not only as simple Intercessors, but also Co-operators and Causes of their Salvations, giving to their *Saints* and *Images* the same honour as is due only to God. They differ from the *Romish* and *Reformed Churches* in several points, 1. In forbidding extreme *Unction, Confirmation*, and fourth *Mannagaz*. 2. Denying the *Holy Ghost* to proceed from the *Father*, and the *Son*. 3. Denying *Purgatory*, but allow praying for the Dead. 4. They hold it unlawful to fast on *Saturdays*. 5. They reject graven or carved *Images*, but allow of the painted. 6. They observe four *Lents* every year. 7. Communicating in both kinds, but mixing warm Water with the *Wine*, and using leavened *Bread*, which they distribute both together with a Spoon. 8. They admit Children of seven years of Age to come to the *Sacrament*. 9. They admit of none to Orders, but such as are married, and forbidding the same to those that are in actual Orders. And 10. Believing that Holy men (before the Resurrection) enjoy not the presence of God, and for these and the like Tenets, there is a great feud and hatred between them and the *Papists*.

The

The *Moscovites* suffer all Nations to live amongst them in quietness, and give toleration to all Religions, except the *Jews* and *Papists*, whom they will not permit amongst them.

They are great observers of *Festival-days*, of which they have abundance; all which are not observed, except by the *Priests*; but their great *Festival-days* are strictly observed, as also *Sundays*, on which they go thrice a day to their Devotions: Their Service consisteth in reading of *Chapters* and *Psalms*, saying, or rather singing of certain Prayers, *St. Athanasius's Creed*; together with a Homily out of *St. Chrysostom*; they are such great Adorers of the *Cross*, that they will undertake no business, neither eat or drink before they have made the sign of the *Cross*; also they are as great worshippers of painted *Images*, there being scarce a Family without them; and also have them placed about the walls of their Churches, directing their Prayers to them; and these *Images* are adorned with *Pearls* and *Precious Stones*; and if it happen that any person is Excommunicated, both He and his *Images* are not allowed the liberty of the Churches, which are esteemed Sacred places by them; and are built round, and vaulted like a *Dove-house* in imitation of *Heaven*. Their Devotion is performed standing or kneeling, having no Seats in their Churches; and in their *Communions* they hold *Transubstantiation*. They are strict observers of *Fasts*, of which they have a great many, besides every *Wednesday* and *Friday*, on which they will not eat any kind of *Flesh*, nor that which comes from it.

Ceremonies observed by them.

Their Fast.

Their Funerals.

At their Funerals they also observe several Ceremonies. As soon as the sick person is deceased, they send for all his *Relations* and *Friends* near at hand, who stand by him lamenting his loss in a howling tone, demanding why he would die? whether he wanted any thing? whether his Wife was constant to him? or the like ridiculous Questions. Also they send to the Priest a Present of *Aqua-vita, Hydromel* and *Beer*, that he may pray for the Soul of the deceased. Their Lamentations being ended, they wash the Body of the deceased, put a clean Shift and Shroud about him, as also a pair of new *Bushkins* on his feet, and so lay him in the Coffin and carry him to Church, the Priest going first, who carrieth the Image of his *Saint*; and being come to the Grave the Coffin is uncovered, and whilst the Priest says certain Prayers, the said Image is held over the Corps, and the Wife, Relation and Friends kiss him, and take their last farewell in grievous Lamentations; then the Priest puts betwixt his fingers a piece of Paper, which is a Pass directed to *St. Peter*, signed by the *Patriarch* or the *Metropolitan* of the place, wherein is declared what he is, how he lived in obedience to the Church, &c. as also a penny in his Mouth; after which the Coffin is covered and the Corps interr'd with his face to the East: then the People doing their devotions to the *Images*, return to the House of the deceased, where they dine and comfort up the Widow. Their usual time of Mourning is forty days, in which time they make three Feasts for the Friends of the deceased.

Baptism.

They hold *Baptism* of great importance, inasmuch that they Baptize their Children so soon as born; and if it happen that through weakness the Child cannot be brought to the Church, then it is baptized at home; and in this they observe several Ceremonies. And the Child being baptized, the Priest assigns it a particular *Saint*, the Image of which he delivers to the Godfather, charging him to instruct the Child to have a devotion to his *Saint*. Their Ecclesiastical Government consisteth of a *Patriarch*, which is the Head of the Church, and as it were *Pope*, who hath under him several *Metropolitans, Archbishops, Bishops, Arch-Deacons, Proto-Popes*, and *Priests*.

Ecclesiastical Government.

The Grand Duke of *Moscow* is absolute Lord both of the Lives and Estates of his Subjects, whom he treats little better than Slaves; his chief aim being for what he can get, more than the good and welfare of his People; being not subject to *Laws*, but makes what seemeth good unto him, which, though never so tyrannical, are strictly obeyed, for he will seem to take advice of his *Knights* and *Bojars*, who are as his *Privy Council*; His *Revenue* and *Rates* cannot but be great from the several ways from which he raiseth it, as by alle-

gal

gal Taxes, Customs, his Lands, and what he taketh from his Subjects at pleasure. He is apparelled like a King and a Bishop, wearing with the Royal Robes a Miter and a Crozier's-Staff, and observeth a great deal of state and grandure.

The Estates of MOSCOVT comprehend 3 Kingdoms, about 30 Dutchiez or Provinces, and about 20 People or Nations, who live by boords or Communitates, all which I have taken notice of in the Geographical Table of Moscovy. The Country is not so populous as spacious, nor very well frequented by Strangers, so that I cannot give so good account thereof, as otherwise I would, of which in order,

Province of Dwina.

DWINA, a Province of a large extent, but very barren, hath for its chief places *Dwina*, seated on the River so called, which falls into the Northern Ocean; and on the Mouth of the said River, on the Sea-shoar is seated the City of St. Michael (commonly called *Arch-Angel*), a place of note for its great Trade, and much resorted unto by the English.

Pleskow.

PLESKOW, a large Province, whose chief place is so called, being large and fair, and the only walled City in the Empire; a place of great strength, very populous, and dignified with an *Episcopal See*.

Novogrodeck.

NOVOGRODECK, very Northernly seated, a Province also of a large extent, whose chief place is so called, seated on the River *Nes*, dignified with an *Episcopal See*, a City which for fairness and largeness, might once compare with any in *Russia*, being formerly one of the Mart-Towns of *Europe*, which is now removed to St. Nicholas, a Port-Town, more convenient for the *Moscovian Trade*.

Province of Moscovia.

CARGATOL, **WOLOGDA**, and **BIELEZERO**, whose chief places bear their names, are Provinces of this Dukedom.

MOSCOVIA is one of the largest Provinces in all *Russia*, and seated in the midst of this large Estate, so called from *Mosco*, its Metropolitan City, seated on a River so called, dignified with the *Imperial Seat*, as also with the See of the *Patriarch*. This City, before its sitting by the *Tartars*, was 9 or 10 miles in circuit, but now not above half the compass; it is very populous, and hath for Divine worship 16 Churches, of which about half are made of Wood and Dirt, as are most of the Houses. The Palace of the Great Duke is seated in the heart of the City, a large Structure, well fortified with 17 Turrets and a great Bulwark, which are always guarded with about 25000 Souldiers, which, with two Castles seated in the outward parts of this City, is its only defence, being without a Wall or Ditch.

Volodimir.

WOLODOMIRE is a Dutchy very fertil in Corn, its chief City being so called, once dignified with the residence of the Great Duke, till removed to *Mosco*, from which it is distant 36 leagues, now dignified with an *Episcopal See*.

Twer.

TWER is a fair, fertile and populous Province, washed by the *Volga*; its chief place is so called, dignified with the See of a Bishop, which for beauty and largeness may compare with *Mosco*, from which it is distant about 149 miles.

Rishowa. Bielski.

RISHOWA, a Dutchy, which takes its name from its chief City; as doth the Dutchy of *Bielski*, which takes its name from *Bielski*, its chief City. *Rishowa* is a Dutchy so fertile, that its fellow cannot be found in all these parts, yielding Corn to admiration; its chief City also bears the same name, which is seated on the River *Occa*, dignified with an *Episcopal See*.

Isag

WOROTIN, a Province also, so called from its chief City, seated on the said River *Occa*, and defended by a strong Castle.

PERMSKI, a Province of a large extent; its chief City is so called, seated on the River *Vischora*.

WIATKA, a barren and woody Country, and much pester'd with the Incursions of the *Crim Tartars*; its chief place being so called.

PETZORA is a Province fenced on all sides by lofty Mountains and Rocks; its chief place takes the name of the Province, seated on a River so called near its fall into the Sea, and on these Mountains are found excellent Hawks and Sables, which bring some profit to the Inhabitants.

INHORSKI, **CONDORA**, **OUSTIOUGA**, **SUSDAL**, **ROSTHOW**, and **JAROSLAU**, are Provinces of this Dukedom.

Towards the South, and about the *Don* and the *Volga*, are several Cities, People, and Fortresses, as are mentioned in the *Geographical Table*; as are several Provinces or Estates upon and beyond the River *Oby*.

Besides these Provinces, the Grand Duke holds at present towards *Asia*, the Kingdoms of *Casan*, *Bulgaria*, and *Astracan*.

CASAN is a Kingdom in *Tartaria Deserta*, whose chief place is so called, seated on the *Volga*; now dignified with the See of a Bishop, is in the Kingdom of *BULGARIA*, whose chief place is so called.

ASTRACAN lieth on the *Volga*, whose chief place is so called, enjoyeth a good Trade, especially by the *Armenians*, by reason of its commodious situation, on the branches of the *Volga*, about 20 Italian miles from the *Caspian Sea*.

The Lath of SUTTON, which again is subdivided into the Hundreds of

Black-heath,
Little and Lefnes,
Bromley and Beckenham,
Rokefley,
Axtan,
Godsheath,
Westram,
Somerden,
Wastington,
Little Barnefeld,
Twyford,
Lowy of Tunbridge,
Little Field,
Wrotham,
Larkfeld,
Maidstone,
Eyhorne,
Gittingham and Chetham,
Shanell,
Tottingtough,
Hoo,

Greenwich,
Deptford,
Wolledge,
Eltham,
Fryth,
Plampsted.
Bromley,
Beckenham,
St. Mary Cray,
Orpington,
Dartford,
Wimbleton,
Greenhith,
Sevenoke,
Oxford,
Welfram,
Brafed,
Speldherst,
Peperbury,
Capell,
Brenchely,
Yalding,
Yunbridge,
Royden,
Wrotham,
Stansted,
Malling,
Aylesford,
Maidstone,
E. Farly,
Lenham,
Stockberry,
Rochester,
Chetham,
Cobham,
Gravensend,
St. Maries,
St. James,
Milton,

The Kingdom of KENT, (wherein is only the County of Kent) may be divided into

The Lath of SCRAY; in which are the Hundreds of

Milton,
Tenham,
Feverham,
Bofton, under Bleane,
Felborough,
Wye,
Kitcholt, Barony,
Chart,
Catehill,
Blackborne,
Barkley,
Cranbrook,
Marden,
Fingocks,
Great Barnfield,
Selbrightenden,
Rolvenden,
Tenderden,
Owney,
Aloesbridge,
Langport,
St. Maris,
Ham,
New-Church,
Worth,
Streate,
Byrcholt Franchis,
Stowing,
Heane,
Lovingbergh,
Falkton,
Bewsbrough,
Corniloo,
Eafly,
Wingham,
Kinghamford,
Bredg and Petham,
Downhamford,
Westgate,
Whitstable,
Bleangate,
Brefon,
Kingfloe, which is the Ifle of Thanet,

Queenborow,
Sittingborn,
Tenham,
Dodington,
Feverham,
Bofton,
Under Bleane,
God Marhal,
Kenington,
Afhord,
Pluckley,
Egerton,
Aplemore,
Orifston,
Byddenden,
Cranbrook,
Stapleherst,
Goodherst,
Marden,
Redgbury,
Flinwell,
Sandherst,
Rolvenden,
Tenderden,
Stone,
Brookland,
Lyde,
Snargate,
Ham,
New-Church,
Bonington,
Romney,
Hyth,
Alington,
Braborne,
Stowing,
Saltwood,
Eltham,
Folkton,
Dover,
E. Langden,
Sandown,
Deal,
Sandwich,
Barfrayton,
Ruyner,
Barnhamdown,
Canterbury,
Patrickfporne,
Vickham,
St. Stephens,
Harbledown,
V. Whitstable,
Scafter,
Reculver,
Hearne,
Elmeston,
St. Johns,
St. Nicholas,
Myulter.

The Lath of SHEPWAY; wherein are the Hundreds of

Worth,
Streate,
Byrcholt Franchis,
Stowing,
Heane,
Lovingbergh,
Falkton,
Bewsbrough,
Corniloo,
Eafly,
Wingham,
Kinghamford,
Bredg and Petham,
Downhamford,
Westgate,
Whitstable,
Bleangate,
Brefon,
Kingfloe, which is the Ifle of Thanet,

The Lath of St. AUGUSTINE; in which are the Hundreds of

Worth,
Streate,
Byrcholt Franchis,
Stowing,
Heane,
Lovingbergh,
Falkton,
Bewsbrough,
Corniloo,
Eafly,
Wingham,
Kinghamford,
Bredg and Petham,
Downhamford,
Westgate,
Whitstable,
Bleangate,
Brefon,
Kingfloe, which is the Ifle of Thanet,

SURREY, which is divided into the Hundreds of

Brixton,
Kingston,
Croydon,
Tandridge,
Reygate,
Cophthorne and Effingham,
Darkling,
Emley,
Chertsey,
Woking,
Farnham,
Godalming,
Blackheath and Wotton,

Southwark,
Rotheriff,
Lambeth,
Batersey,
Putney,
Wandsworth,
Clapham,
Kingston,
Richmond,
Mortlack,
Croydon,
Cathalon,
Cheame,
Carthalon,
Bletchinghish,
Burfrow,
Reygate,
Horley,
Ewell,
Bantled,
Ebenham,
Darking,
Newdigate,
Charlewood,
Cobham,
Weybridge,
Walton,
Chertsey,
Egham,
Frimley,
Guilford,
Ockham,
Woking,
Farnham,
Puttenham,
Peperharo,
Godalming,
Witley,
Albury,
Cranley,
Dunsfold.

The Kingdom of the SOUTH-SAXONS, which contained the Regni; and now the Counties of

SUSSEX, which is divided into the Rapes of

Chichester,
Arundell,
Bramber,
Lewes,
Pevensey,
Hastings,

Chichester,
Mydhurst,
Rogat,
Binderton,
Edbourne,
Chydham,
Thorney,
Emley,
Welf Wittering,
Salley,
Paworth,
Arundell,
Scorington,
Hampdon,
Fering,
Burpham,
Batham,
Billingham,
Rudgwick,
Hornham,
Shoram,
Stening,
Tarring,
Shipley,
Echingfold,
Rufper,
Lewes,
Coxfield,
Bighemston,
Myching,
Oford,
Scamfer,
Porftad,
Wivelsfield,
Balcombe,
Crawley,
East Grinstead,
Buckhurst,
East-Bourne,
Mayfield,
Fletching,
Haytham,
Bishopston,
East Deane,
Pemley,
Winchelsey,
Rye,
Hastings,
Eagle,
Wartling,
Warbleton,
Eauwood,
Burwash,
Elinwell,
Nordiam.

E N G L A N D

The

The Kingdom of the NORTHUMBERS, which contained the Brigantes, or Counties of	YORKSHIRE, with its several Hundreds, as they may be considered in the	
	West Riding.	Stancliffe, Claro, Ainsty, Barkston, Skirack, Morley and Agbrigg, Ofgodrois, Strassforth, Staincross, Gillingwell, Hangewell, Hangeast, Gillingeath, Hallikeld, Bulmar, Burford, Allerton, Langbargh and Whitby- strand, Pickering, Rydale, Buckcross, Dickerling, Holderness, Hunfley, Binson, Harthill, Wilton, Holme, Oufe and Darwent, Howdensker,
	North Riding.	Skipton, Rippon, Borough-bridge, Ripley, Knarborough, Busbopthorp, Selby, and Tadcaster, Otley, Halyfax, Bradford, Wakefield, Pontefract, Snathe, Doncaster, Rotherham, Sheffield, Bautre, and Tickhill, Barnsley, Richmond, Midlam, Matham, Bedall, Langton great, Tanfield, York, Thruske, Alverton, Varum, Stokesley, Gishburgh, Whitby, Scarborough, Pickering, Malton, Hovingham, Helmsley, Kirby-more-side, Setterington, Bridlington, Kilham, Flamborough-head, Headen, Sprunthead, Hull, Beverley, Bainton, Pocklington, Wilton, Wighton, Stillingfleet, Howden,
	East Riding.	Lancaster, and Hornby, Ulverton, and Dalton, Hawkhead, Sunderland-point, Garfrange, Kirkham, Preston, Blackburne, and Haslingde, Colne, Brantley, and Cletherow, Wigan, and Ecclestone, Manchester, and Rochdale, Bolton, and Bury, Ormskirke, Lerpooie, Warrington, Durham, Hartpooie, Bishops-Aukland, Darlington, Stayndrop, Bernard-Castle, Derwent-fort-haven, Sunderland, Stockton, Carlisle, Penreth, Brampton, Wigton, Wetheral, Treby, Abby, Holme, Kelwick, Kirkfild, Cockermouth, Ireton, Werkington, Botle, Egremond, Whitehaven, Ravensglafe, and Bleunerhafter, Apleby, Burgh, Kirby-Stephens, Orton, Kirby-Landall, Burton, Kendal, and Ambleside, Newcastle, Timmouth-haven, and Caisls, Hexham, Morpeth, Alnewick, Barwick, Woller, Holy Island, Cocker Island,
LANCASHIRE, where are the Hundreds of		Loynfedale, Amoundernes, Blackborne, Layland, Salford, West Darby,
The Bishoprick of DURHAM (as yet not divided into Hundreds,) whose chief places are		
CUMBERLAND, (as yet not severed into Hundreds) hath for its principal places,		
WESTMORELAND, (also as yet not divided into Hundreds) whose chief places are		
NORTHUMBERLAND, (as yet also not severed into Hundreds) hath for its noted places		

Part of the Kingdom of the MERCIA, which contained the	HUNTINGTONSHIRE, with its Hundreds of	
	BUCKINGHAMSHIRE; where are the Hundreds of	Norman-cross, Huntington, Leightonstone, Toiland, Stoke, Burnham, Desbury, Alesbury, Abenden, Buckingham, Cotflow, Newport, Stoddan, Wyllly, Barford, Biggleswad, Wixantree, Redbornock, Flitt, Clifton, Manhead, Allfoe, East, Martinsey, Wrangedyke, Oukhamfook, Maffaburgh, Willbrooke, Corby, Colbrook, Navisford, Huxloe, Orlingsbury, Rothwell, Gullsborow, Fauzey, Newbottle-grove, Shephoe, Hampfordhoe, Highamferyes, Clisley, Towcester, Wimerley, Norton, Warden, Sutton, West Gosfore, East Gosfore, Framland, Gartery, Guthlaxton, Sparkinhoe, Manbie, Varrbrough, Brodley, Ludbrough, Walchcroft, Allasoe, Corringham, Well, Lawris, Wriggoe, Garre, Louthask, Calceworth, Candleshoe, Hill, Bullingbrook, Horncastle, Lango, Bothby, Loveden, Flaxwel, Ashwardhurn, Wivebridge, Grantham, Aveland, Belsifoe, Nels, Ellowe, Kireon, Skirkeek, Northclay, Baffclaw, Southclay, Thurgarton, Newark, Bingham, Rukclyfe, Highpeake, Scardale, Workworth, Applerce, Morleston, Reppington,
	BEDFORDSHIRE; in which are the Hundreds of	Vaxley, and Ramsey, Huntington, and St. Ives, Kimbolton, St. Neats, and Godmanchester, Colbrooke, and Eaton, Econsfield, High-Wickham, and Amer- Marlow, Alesbury, and Wendover, Abenden, Buckingham, Winslow, and Ivingo, Newport, Stony-Stratford, and Oulney, Rytle, Bedford, Bedford, Biggleswade, and Potton, Cardington, Ampthill, Luton, Shefford, Woborne, Tuddington, Leighton, and Dunstable, Burley, Catterton, Barroughdon, Uppingham, Oakham, Peterborough, Naffington, Rockingham, Oundle, Thrapton, Kettering, Rothwell, Eilborn, Daventry, Newbottle, Northampton, Wellingborne, Higham-Ferrers, Gratton, Towcester, Wotton, Blakelly, Edgecote, Brackley, Ashby de la Zouth, Montfort, & Lough- Leicester, Melton Mowbray, and Waltham on the Hallaton, Harbrough, and Billesden, Lutterworth, and Bennones, Botworth, and Hickley, Burton, and Kirtan, Barton, Glamfordbridge, and Limberg, Grimsby, and Thongaster, Cawthorp, Binbrook, Bishops-Norton, Gainsburgh, Brampton, Lincoln, Rande, Horncastle, and Market-Stranton, Salesby, Louthe, and Market-Rofens, Alford, Wainfeer, and Burgh, Harlington, Bullingbrook, and Spilsby, Horncastle, Blackney, North Hickham, Beckingham, Sleford, Howel, Ancaster, Grantham, and Belvoir Castle, Folkingham, and Bourn, Corbye, Market-Deping, and Stamford, Spalding, Holbeck, and Crowland, Dunington, and Kirtan, Bolton, Bedford, Worktop, and Blyth, Darlington, Nottingham, and Southwell, Newark, Bingham, Codrington, Mansfield, Tideswal, Bakewel, and Chaple in the Chetterfield, Allitton, and Bellover, Wirksworth, and Ashborne, Sherley, Darby, Newsonfony,
	RUTLANDSHIRE, with its Hundreds of	
NORTHAMPTONSHIRE, which may be considered as it is divided into the Hundreds of		
LEICESTERSHIRE, with its Hundreds of		
CORITANI, or Counties of		
LINDSEY, with its Hundreds of		
LINCOLNSHIRE, as it is divided into the parts of		
REKSEVEN, where are the Hundreds of		
HOLLAND, with its Hundreds		
NOTTINGHAMSHIRE; where are the Hundreds of		
DARBYSHIRE, with its Hundreds of		

OXFORDSHIRE; where
are the Hundreds of

DOBIMI,
or Counties
of

GLOUCESTERSHIRE;
which may be considered as it
is divided into the Hundreds of

WORCESTERSHIRE;
where are the Hundreds of

WARWICKSHIRE; with
its Hundreds of

STAFFORDSHIRE; with
its Hundreds of

CHESHIRE; where are the
Hundreds of

SHROPSHIRE; which may
be considered as it is divided
into the Hundreds of

HEREFORDSHIRE; in
which are the Hundreds of

Banbury.	Banbury.
Bloxam.	Milcombe, and Hooknorton.
Chadlington.	Chippingnorton.
Wotton.	Oxford, Woodstock, and Deddington.
Ploughley.	Burcester.
Bullington.	Cuddesden.
Bampton.	Burford, Witney, and Bampton.
Dorchester.	Dorchester.
Tame.	Tame.
Lewknor.	Emington.
Pirton.	Watlington.
Ewelme.	Warbro.
Binfield.	Hentley.
Kyrate.	Winchcombe, and Camden.
Tewksbury.	Tewksbury.
Botloe.	Newnham, and Newent.
Wellminster.	Apperley.
St. Briavels.	Dean Magna.
Wellbury.	Westbury.
Blidestow.	Blakeney, or Blakley.
Cleve.	Cleve.
Tibolton.	Beckford.
Chettenham.	Chettenham.
Kingsbarton.	Sherton.
Dudstone.	Gloucester.
Rapigate.	Elton.
Bradly.	Lech.
Slaughter.	Stow on the Woud.
Bristlesbarrow.	Lechlade.
Crotherne.	Cirencester.
Biefley.	Stroud, and Panfick.
Whitstone.	Leonard, and Stanley.
Longree.	Minchinhampton, and Tetbury.
Grombald.	Chipping-fodsbury, Marsfield, and Hor-
Wotton.	ton.
Gloucester.	Durley, and Wotton Underedge.
Barkley.	Sutton.
Thornbury.	Barkley.
Swindon & Langley.	Thornbury, and Fairfield.
Henbury.	Littleton.
Barton.	Compton Grenuyd.
Pocklechurch.	Bristol.
Halfshire.	Pucklechurch.
Dodington.	Sturbridge, and Kidderminster.
Worcester.	Droitwich, and Bromesgrove.
Upton.	Bewdly, and Tenbury.
Perthor.	Worcester.
Ofwallerdow.	Upton.
Blakenhurst.	Perthor.
Hemlingford.	Throgmorton.
Coventry.	Everchombe.
Knightslow.	Solihul, Bermicham, Poleworth, Tam-
Kyneton.	worth, Colchil, Suttoncofield, Ather-
Barlichway.	ton, and Nun-Eaton.
Tomontloe.	Coventry.
Dyrehil.	Rugby, and Southam.
Cudleston.	Warwick, Kyneton, and Shipton.
Seifdon.	Bitford, Stratford on the Avon, Aul-
Offelow.	ster, and Henley in Arden.
Wyrehal.	Lecke, Chedle, Uttoxeter, and Pagis
Edesbury.	Bromley.
Broxton.	Stafford, Newcastle, Ecclehal, and Stow.
Nantwich.	Brewood, Ridley, and Penkrich.
Northwich.	Wolverhampton.
Macclesfield.	Lichfield, Burton on Trent, Walsal, and
Bucklow.	Legrave.
North-Bradford.	Frodesham, and Tarvin.
Finhill.	Chelfter, and Malpas.
Ofwestre.	Nantwich.
Ford.	Northwich, Middlewich, Sambach, and
Chirbury.	Congleton.
Purflow.	Macklesfield, and Stopford.
Clunn.	Kaotesford, and Altringham.
Munflow.	Whitechurch, Draton, Prees, and Wem.
Stottedon.	Elmere.
Shrewsbury.	Ofwestre.
Wenlock.	Strettons.
Condover.	Chirbury.
Bradford.	Bishops-Castle, and Shipton.
Brimfry.	Bettus.
Wigmore.	Didlesbury.
Hunlington.	Ludlow.
Ewiaslacy.	Bridgnorth, and Clebury.
Webtre.	Shrewsbury.
Wormelov.	Wenlock.
Greyree.	Stapleton.
Radlow.	Newport, and Wellington.
Grimworth.	Bonyngal.
Broxath.	Kyneton.
Wolfe.	Huntington.
Strexford.	Hardwick.
	Madley.
	Great Birch.
	Rofa.
	Lidbury.
	Hereford.
	Bramyard.
	Lemter.
	Pemburidge, and Webley.

WALES,

FLINTSHIRE, as yet not divided into Hun-
dreds; it hath for its chief places

DENBIGHSHIRE, as yet also not divided in
to Hundreds, hath for its chief places

CAERNARVANSHERE, also as yet not se-
vered into Hundreds, whose chief places are

**NORTH
WALES**;
where are
the Counties
of

ISLE of ANGLESEY,
with its Hundreds of

MERIONETHSHIRE;
where are the Hundreds of

MONTGOMERYSHIRE;
in which are the Hundreds of

RADNORSHIRE; where
are the Hundreds of

BRECKNOCKSHIRE,
with its Hundreds of

CARDIGANSHIRE, with
its Hundreds of

PEMBROOKSHIRE,
which is divided into the Hun-
dreds of

**SOUTH
WALES**;
in which are
the Counties
of

CAERMARDENSHIRE;
where are the Hundreds of

GLAMORGANSHIRE;
in which are the Hundreds of

MONMOUTHSHIRE,
(now an English County),
where are the Hundreds of

Tallibollion.	St. Asaph.
Llyfion.	Flint.
Tyndarhywy.	Cajervia.
Twrclynn.	Denbigh.
Meney.	Llanrol.
Maltrach.	Ruthin.
Arddwy.	Wrexham.
Talibout.	Carnarvan.
Vhymanale.	Bangor.
Pethly.	Aberconwey.
Ndeirmon.	Newin.
Mechavy.	Bulkeley, and Kreckyth.
Yfiondmarchel.	Bardeley Island.
Kery.	Holyhead.
Kiddion.	Llandogarn.
Kare Eynion.	Bewmatia.
Kyfy Log.	Llandourodok.
Yrddly.	Newburgh.
Rayadergowy.	Aberffraw.
Knighon.	Harlech.
Kerthlic.	Dolgelhe.
Radnor.	Aberdowye.
Painscastle.	Maynloyd.
Collowini.	Gala.
Bealt.	Gorwen.
Talgarth.	Llanvilling.
Methye.	Montgomery.
Dyvynnock.	Welmpool.
Penkelly.	Kery.
Crickhole.	Newtown.
Tredvoir.	Llandagan.
Moythen.	Machenict.
Pennarth.	Llanidlo.
Llanllan.	Rayadergowy.
Llanbadarn.	Knighon.
Kema.	Llanbadarn.
Kilgarvan.	New Radnor.
Dewy Island.	Prellaine.
Dungledy.	Llanhedder.
Rowfe.	Dyflar.
Nerberth.	Bealt.
Casle Martin.	Hoy.
Derilly.	Mertrekyoek.
Elluet.	Divynock.
Kildwelly.	Brecknock.
Perue.	Clecowell.
Cayo.	Cardigan.
Cathinok.	Cardigan Island.
West Gowre.	Llanbeder.
Llangvelach.	Tregaron.
Neath.	Llanruffel.
Newcastle.	Aberystwyth.
Ogmore.	Newport.
Cowbridge.	Kilgarvan.
Denispowis.	St. David's.
Cardiff.	Ramsey Island.
Caerfily.	the Bishop and his Clerks.
Lantriffent.	Lauhaden.
Bergavenny.	Wilton.
Skenfrith.	Maverford, west.
Ragland.	Rosemarket.
Caldicot.	Sealine Island.
Uske.	Stockholme Isle.
Wentlog.	Teaby and Narberth.
	Pembroke.
	Caldey Island.
	Kancharne.
	Caernarden, and Newcastle.
	Kidwily.
	Llanellhye.
	Llanymdofry.
	Llangedok.
	Llandilouawre.
	Abergerlich.
	Swanley and Pehrife.
	Mumbles point.
	Pennarth point.
	Oswich point.
	Wormhead point.
	Llanfamed.
	Aberavon, and Neesh.
	Bridgend.
	Ogmore Castle.
	Nath point.
	Cowbridge.
	Porkerry Castle.
	Barry Island.
	Sylve Ile.
	Cardiff.
	Llandaff.
	Caerphilly.
	Lantriffent.
	Abergavenney.
	Mounnoth.
	Ragland.
	Chepton.
	Goldcliff.
	Uske.
	Carlion.
	Newport.

ENG-

Part of the
Kingdom of
MERCIA,
which con-
tained the

CORNAVII,
or Counties
of

ENGLAND.

Small Isles be-
longing to
Great Britain.

THE Kingdom of England, with that of Scotland, forms an Island, which bears the name of *Great Britain*; unto which be-
longeth a vast number of lesser *Isles*, which may be considered
under four heads or sorts, *viz.* the *Orcades*, the *Hebrides*, the
Sorlings, and the *Isles of Scilly*, with those of the *Sporades*.
All which said *Isles*, with that of *Ireland*, are situate between the 49th and the
53th degrees of *Longitude*, and the 50th and 59th of *Latitude*.
England is divided from Scotland by the River *Tweed* and *Solway*, a line
being drawn from the one to the other; and on all other sides it is begirt with
the Sea.

Its extent and
division.

The extent and form of these *Isles*, with their situation to each other, do
appear in the *Map*, to which I refer the Reader.

But 'tis probable that some may judge the *Maps* false, for that the true *Ge-*
ographical distances of places are lesser than the *Itinerary*. But these Reasons are
sufficient to satisfy any to the contrary, 1. the unpallable *Woods*, which lie
between places; 2. the high *Mountains* and low *Vallies*; 3. the *Marishes* or
Boggs; 4. the *Rivers* or *Ponds*; and 5. the *Parks*, or other enclosures, which
cause the Traveller to leave his direct line and go about.

It may be divided into two (though unequal) parts, to wit, *England* and
Wales, separated each from other by the *Severn* and a line drawn to the *Wye*,
but the more certain division was by a huge Ditch (which beginning at the
Influx of the *Wye* into the *Severn*, reached to *Chester*, where the *Dee* dis-
burthens its self into the *Sea*) 80 miles in length; made by *Offa* King of the
Mercians, and called *Claude Offa*.

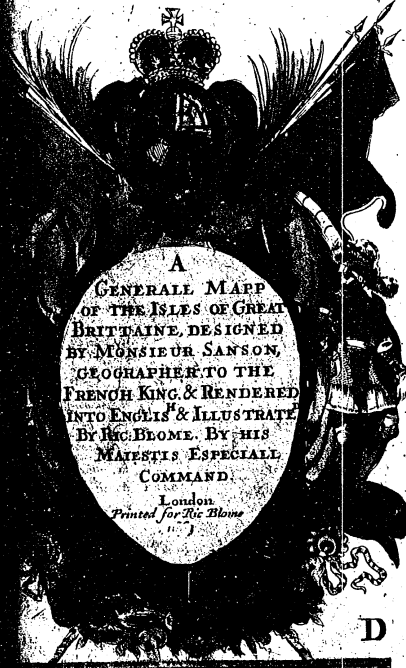
This Kingdom of *England* is severed into 52 *Shires* or *Counties*, of which
12 make the Principality of *Wales*; and these *Counties* are subdivided into
Hundreds, *Wapentakes*, or *Wards*; and those again into *Parishes*, which
comprehend *Boroughs*, *Villages*, *Hamlets*, *Endships*, or *Tithings*.

Its division
according to
the Circuits of
the Judges.

England is also divided into six parts, for the Circuits of the 12 *Itinerary*
Judges, two of which twice every year are allotted for each Circuit, in
the chief Town or Towns of each County in the said Circuit, to sit and
hear Causes, and to administer Justice for the ease of the Subject; and accord-
ing to this division, one Circuit doth contain the Counties of *Wilts*, *Somerset*,
Devon, *Cornwall*, *Dorset*, and *Hants*. Another, those of *Berks*, *Oxford*,
Gloucester, *Monmouth*, *Hereford*, *Worcester*, *Salop*, and *Stafford*. Another,
those of *Kent*, *Surry*, *Sussex*, and *Hartford*. Another, those of *Bedford*,
Bucks, *Cambridge*, *Huntington*, *Norfolk*, and *Sussex*. Another, those of
Northampton, *Rutland*, *Lincoln*, *Derby*, *Nottingham*, *Leicester*, and *Warwick*.
And another, those of *York*, *Durham*, *Northumberland*, *Cumberland*, *Westmore-*
land, and *Lancaster*. The two remaining Counties, *viz.* *Middlesex* and
Cheshire being exempted, the one for its vicinity to *London*, and the other as
having its peculiar *Judges* for the administration of Justice.

Its division ac-
cording to the
Spiritual Ju-
risdiction.

For *Spiritual* or *Ecclesiastical Jurisdiction*, this Kingdom is divided into
two Archbishopricks, *viz.* *Canterbury* and *York*, under which are 25 Bishops;
of which 22 belong to that of *Canterbury*, who is Primate and Metropolitan
of all *England*, and but 3 to that of *York*. Now what these *Bishopricks* are,
this following Table will declare unto you.



A
GENERALL MAP
OF THE ISLES OF GREAT
BRITTAINE, DESIGNED
BY MONSIEUR SANSON,
GEOGRAPHER TO THE
FRENCH KING, & RENDERED
INTO ENGLISH & ILLUSTRATED
BY JAC. BLOME. BY HIS
MAJESTY'S ESPECIAL
COMMAND.
London
Printed for J. Blome
1673

The most August, Charles the 2^d by the grace of God
King of England, Scotland, France, and Ireland,
defensor of the Faith, &c
this Map with all humilitie is Consecrated
by your Majesties Obedient subject & Servant
J. Blome

S E

T H E

O C C I

D E N

T A L

O C E A N



OCEAN

THE

G E R

M A I N

O C E

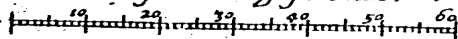
A N

I R I S H

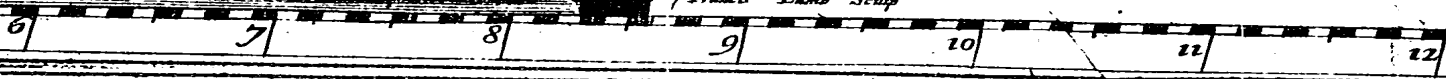




A Scale of 60. English Miles



Francis Lamb Sculp





A Catalogue of the Archbishopricks, and Bishopricks of England and Wales; together with what Counties are under their Jurisdictions, and what Parishes and Impropriations are in each Diocess.

Archbishopricks, and Bishopricks,	Counties under each of their Jurisdictions.	Parishes in each Diocess,	Impropriations in each Diocess,
Canterbury hath	Canterbury, and part of Kent,	257	140
Tork hath	Yorkshire and Nottinghamshire,	581	336
London hath	Essex, Middlesex, and part of Hertfordshire,	623	189
Durham hath	Durham and Northumberland,	135	87
Worcester hath	Worcestershire, and part of Warwickshire,	241	76
Winchester hath	Hantsire, Surrey, Isles of Wight, Garnsey and Jersey,	362	131
Bath & Wells hath	Somersetshire,	388	160
Oxford hath	Oxfordshire,	195	88
Bangor hath	Carnarvanshire, Anglesey, Merionethshire, and part of Denbighshire,	107	36
Rochester hath	part of Kent,	98	36
Ely hath	Cambridgeshire,	141	75
Chichester hath	Sussex, and part of Hertfordshire,	250	112
Salisbury hath	Wiltshire and Berkshire,	248	109
Lincoln hath	Lincolnshire, Leicestershire, Bedfordshire, Huntingdonshire, Buckinghamshire, and part of Hertfordshire,	1255	577
St. Asaph hath	part of Flintshire, and part of Denbighshire,	121	19
St. Davids hath	Pembrookshire and Carmarthenshire,	308	120
Peterborough hath	Northamptonshire and Rutlandshire,	293	98
Landaff hath	Glamorganshire, Monmouthshire, Brecknockshire, and part of Radnorshire,	177	98
Carlisle hath	part of Cumberland, and part of Westmerland,	92	78
Exeter hath	Devonshire, Exeter City, and Cornwall,	604	239
Chester hath	Cheshire, Richmondshire, Lancashire, part of Cumberland, Westmoreland, Flintshire, and part of Denbighshire,	256	101
Bristol hath	Dorsetshire, and the City of Bristol,	236	64
Norwich hath	Norfolk and Suffolk,	1121	385
Gloucester hath	Glocestershire,	267	125
Hereford hath	Herefordshire, part of Shropshire, Worcestershire in part, and part of Radnorshire,	313	166
Coventry and Lichfield hath	Staffordshire, Derbyshire, Warwickshire, and part of Shropshire,	557	239

Besides peculiar to the Diocess of Canterbury.

To these may be added the Bishoprick of Sodor in the Isle of Man, under the Archbishoprick of York, but hath no place or Vote in Parliament.

Its fertility
and commo-
dities.

ENGLAND is a Kingdom blest with a sweet and temperate Air, and for the generality of a fertile Soil, and very grateful to the Husbandman, abounding in all things necessary for the use of Man, both for Food and Rayment, as *Corn, Cattle, Fowl, Fish, Fruit, Roots, &c.* In the bowels of the globe Earth are store of excellent Mines of *Lead, Tin, Iron, Copper, Black-Lead*, not where in *Europe, Coal*, and some of *Silver*. It also produceth *Hops, Linnen-Cloth, Tallow, Hides, Leather, Calves-skins, Sheep-skins, Cony-skins*, and some *Furrs*; also *Wax, Stockings, Hats, Saffron, Honey, Madder, Butter, Cheese, Herrings, Pilchers, and Barrel-Coal*; but above all, *Wool*, of which is made great abundance of excellent *Cloth, Serges, Bays, Kerseys, Worsted*, and the like Manufactures, which find great vent in Foreign parts; and for Building it affordeth all Materials.

The Weights.

The *Weights* current in this Kingdom are of two sorts, *viz. Troy and Averdupois*. Of *Troy* 24 grains make a penny-weight, 10 penny-weight an ounce, and 12 ounces a pound, from which pound *wet Measures* are derived, a pint making a pound; and by this weight, *Gold, Silver, Silk, Pearl, Precious Stones, Bread, &c.* are weighed. By the *Averdupois* is weighed *Butter, Cheese, Flesh, Tin, Iron, Fruits*, and generally all garbled and ponderous Commodities; and this weight is reduced into several denominations, as *Tuns, Hundreds, Quarters, Pounds, Ounces, and Drams*; where note, that 16 drams make an ounce, 16 ounces a pound, 28 pound a quarter, 4 quarters a hundred, and 20 hundred a Tun.

The Measures.

The *Measures* are three, *viz. dry, liquid, and long*; the *Dry* are those in which all sorts of dry Commodities are measured, and consisteth also of several denominations, as a pint, quart, gallon or half-peck, peck and bushel, which containeth 64 pints, or 32 quarts, which is 8 gallons; also 8 Bushels make a Quarter, 9 Bushels a Fat of *Coals*, which is a quarter of a Chaldron, 5 Quarters a Wey, 10 Quarters a Last, and 20 Lasts a Combe.

Liquid Measures are those in which liquid substances are measured, of which a Gill is the least, next a quarter, half-pint, pint, quart, pottle, and gallon, which is 4 quarts, 8 Gallons make a Firkin of *Ale*, and 9 a Firkin of *Beer*; 2 Firkins a Kilderkin, 2 Kilderkins a Barrel, which is 36 gallons; 42 Gallons a Tierce, 63 Gallons a Hogshead; 2 Hogsheads a Butt or Pipe, and 2 Butts a Tun. But note that the *Wine Measures* are of less content than the *Ale*, for 4 Gallons *Ale-measure* make 5 *Wine-measure*.

Long Measures are those by which *Cloth, Stone, Glass, Land, &c.* is measured, of which an Inch, which is esteemed the length of 3 *Bart* corns (though divided into less denominations, as half a quarter of an Inch) is the least; and 12 Inches make a Foot, 3 Foot a Yard, which is divided into 16 parts, or Nails; 3 Foot 9 Inches is an Ell, 6 Foot a Fathom, 5½ yards, or 16½ foot is a Rod, Perch, or Pole, 40 Rods a Furlong, 8 Furlongs an *English Mile*, which is 320 Poles, or 1760 Yards, or 1056 Paces, at 5 foot to the Pace.

Of Weights, Measures, &c. used in particular Commodities, viz.

The weight
and measure
of particular
commodities.

A Fodder of *Lead* is 19½ Hundred, a Load is 36 Formels or 175 Stone, and a Stone is 5½ pound.

A Fagot of *Steel* is 120 pound, and a Barrel of *Gun-Steel* is 180 pound.

A Stone of *Glass* is 5 pound, and 24 Stone is a Seam.

A Last of *Herrings* is 12 Barrels, every Barrel 12 hundred, and every Hundred 120 *Herrings*.

A Last of *Powder* is 24 Firkins, every Firkins weighing 100 pound neat, and the empty Firkin 2 pound.

A Load of *Timber*, is 10 foot of square Timber.

A Stack of *Wood* is 3½ foot in height, and 12 in length.

A Fagot of *Wood* ought to be 3 foot in length, and 14 inches about, besides the Band.

Billets

Billets ought to be 3 foot and 4 inches in length, and the single *Billet* must be 7½ inches about; the *Cast-Billet* 10 inches, and the two *Cast-Billets* 14 inches about. *Billets* of a Cast must be nicked within 4 inches of the end, and *Billets* of 2 Casts within 6 inches of the middle.

A full Sack of *Coals* is 3 Bushels.

Ten Hides make a Dicker, and 20 Dickers a Last of *Leather*.

A Rowl of *Parchment* is 5 dozen.

Twenty Quires of *Paper* is a Ream, and 10 Reams a Bail.

A *Latb* must be 5 foot long, 2 inches broad, and half an inch thick.

A *Plain-Tile* must be 10½ inches in length, 6½ in breadth, and half an inch thick.

Roof-Tiles must be 13 inches in length, with a good and equal proportion of breadth and thickness.

Pan, or Paving-Tiles, must be 10 inches square, and 1½ inch thick.

A *Brick* must be 9 inches long, 4 broad, and 2 inches thick.

Nails are sold by the 1000, and 120 to the hundred.

A Truss of *Hay* is to weigh 56 pound, and 36 Trusses make a Load.

A Truss of *Straw* should weigh 36 pound, and 36 Trusses make a Load.

As concerning the Courts of Justice of this Kingdom, they may be considered under three sorts, to wit, *Ecclesiastical, Temporal*, and one mixt of both; and under these three sorts are comprehended all the Courts of Judicature. For *Ecclesiastical* Affairs, are the Synod or Convocation of the Clergy, and the Provincial Synod, which is kept in both Provinces of *Canterbury* and *Tork*, *viz. the Courts of Arches, the Courts of Audience, the Courts of Faculties, the Prerogative Court, and the Court of Peculiars*. The Courts for *Temporal* Affairs are of two kinds, *viz. for Law and Equity*: for *Law*, those of the *Kings Bench, Common Pleas, Exchequer, Assizes, Court of Admiralty, Duchy Court, &c.* And for *Equity*, those of the *Chancery, Exchequer, Requests, &c.* And besides these Courts, there are several other Inferiour Courts held in particular Liberties for the Inhabitants thereof. And all these Courts have their peculiar Judges and other sub-Officers.

Courts of
Judicature.

As concerning Precedency, all Nobles of each degree take place according to their Seniority of Creation, and not of years, unless descended of the *Blood Royal*, and then they take place of all others of that degree. Yet there are some that by their great Offices or Places at Court, or setting at the Helm of State, have precedence; as the Lord Chancellor or Lord Keeper, Lord President of his Majesties Council, Lord Privy Seal, Lord high Chamberlain, the Earl Marshal, the Lord Chamberlain, the Master of the Horse, &c.

Precedency.

Precedency may be thus observed; The King, who is the fountain of Honour; the Prince of England, who is eldest Son to the King, and is born Duke of Cornwall, and about the age of 17 years is usually created Prince of Wales; Princes of the Blood Royal, who are the Sons, Brothers, Uncles, and Nephews of the King. The Archbishop of Canterbury, the Lord Chancellor or Lord Keeper; the Archbishop of York, Lord Treasurer of England, Lord President of the Privy Council, Lord Privy Seal, Dukes, Marquesses; Dukes eldest Sons, Earls, Marquesses eldest Sons, Dukes younger Sons, Viscounts, Earls eldest Sons, Marquesses younger Sons, Bishops, Barons, Viscounts eldest Sons, Earls younger Sons, Barons eldest Sons, Privy Counsellors that are not Noblemen, Judges, Viscounts younger Sons, Barons younger Sons, Knights of the Garter (if not otherwise dignified, as is rarely found), Knights Bannerets, Baronets, Knights of the Bath, Knights Batchelors, Colonels, Sergeants at Law, Masters of Chancery, and Doctors and Esquires; and those may be comprehended under five several heads. 1. Esquires unto the Kings Body; 2. the descendants by the Male-line from a Peer of the Realm; 3. the eldest Sons of Knights of the Garter, Baronets, Knights of the Bath, and Knights Batchelors; 4. the two Esquires attending on the Knights of the Bath at their Knighting; and 5. Officiary Esquires, as Justices of the Peace, Barresters at Law, Lieutenant Colonels, Majors, and Captains; and lastly, Gentlemen.

At a *Marſhal Court* held at *White-Hall* the 18th of *March*, *An.Dom.* 1615. it was declared and concluded on, that there are two degrees that eſtabliſh and ſettle the Title of an *Eſquire* by birth; the one, the younger Sons of *Peers* of the Realm, which do inveſt into the Heirs-males deſcended from them the Name and Title of *Eſquires*; the other, the lineal Heir-male of a *Knights* Houſe; and theſe may juſtly aſſume and challenge the Title of *Eſquire* by birth; ſo that in all reaſon, the younger Sons of *Peers* are more worthy than *Knights*: ſo the ſetting of a Title proceeding from them, is more worthy and eminent than that derived from *Knights*.

The Dom-
inions of Eng-
land.

The Dominions of the King of *England* are very large, for beſides that of *England*, *Scotland*, and *Ireland*, there are divers ſmall *Iſles* ſituate nigh unto them, and do belong to one or the other; as the *Iſles* of *ORKNEY*, or *ORCADES*, in number 32, ſeated againſt the North-cape of *Scotland*. The *Iſles* of *SHETLAND*, alſo under the *Scottiſh* Dominions; the *HEBRIDES*, in number 44, ſeated Weſtwards of *Scotland*; the *SORLINGES*, ſeated in the Weſtern-cape of *Cornwall*; the *SPORADES*, being ſeveral *Iſles* diſperſed about the *Britiſh Seas*, amongſt which theſe following are the chief: *MAN*, ſituate between *England*, *Scotland*, and *Ireland*; *FERSEY* and *GARNSEY* on the *French Coast*; *WIGHT*, part of *Hantſhire*; *PORTLAND*, part of *Dorſetſhire*; *STEEP HOLMS* and *FLATHOM*, in *Somerſetſhire*; *AIBBRE*, in *Cheshire*; *DENNY*, in *Monmouthſhire*; *CODLEY*, in *Pembrokeshire*; *ANGLESEY*, which is one of the *Welſh* Counties; *SHEPPEY*, in *Kent*; *NORTHET*, *OSEY*, and *HORSEY*, in *Effex*; *FERNE*, *COCKET*, and *HOLY Iſle*, in *Northumberland*; with ſeveral other ſmall *Iſles* not worth the naming, as indeed many of theſe are. Then in *Africa*, as *TANGIER*, *GUINEY*, &c. In the *East Indies* ſeveral places, though belonging to the *East-India Company of London*; and in *America* large Dominions, as *NEW ENGLAND*, *NEW YORK*, *MARY LAND*, *VIRGINIA*, *CAROLINA*, all which are on the Continent; alſo divers *Iſles*, ſome of which are very conſiderable, as *JAMAICA*, *BARBADOS*, *BERMUDOS*, *ANTEGO*, *NEW FOUNDLAND*, &c. all which ſhall be treated of as they come in order; but firſt of the *Engliſh* Counties.

County of
Barkſhire de-
ſcribed.

BARKSHIRE, well clothed with Wood and watered with Rivers, is bleſt with a ſweet Air, hath a rich Soil fit both for *Corn* and *Paſturage*, (eſpecially in the Vale of *Whitehorſe*;) and generally the whole County, for profit and pleaſure, yieldeth to few Shires in *England*. The principal Commodity that this Shire produceth is *Cloth*, which finds great vent: and amongſt the Rivers that water the County, the *Iſis*, the *Oke*, and the *Kenet* (which affords excellent *Trouts*) are the chief.

It is ſepered into 20 Hundreds, in which are 140 Pariſhes, and hath 12 Market Towns.

Reading.

Reading, pleaſantly ſeated near the *Thames*, and on the *Kenet*, which is navigable for Barges to *London*, which adds much to its Trade, which is conſiderable, eſpecially for *Cloth* and *Mault*; 'tis a large Town, containing three Pariſh Churches, is beautified with well built Houſes, hath fair Streets, is well inhabited and hath a very conſiderable Market for Grains, *Malt*, *Hops*, and moſt Country commodities, on *Saturdays*. 'Tis a Town Corporate, governed by a *Major*, 12 *Aldermen*, and as many *Burgeſſes* with ſub-Officers, enjoyeth ſeveral Immunities, and ſendeth *Burgeſſes* to Parliament. 'Twas formerly beautified with a fair and rich Monastery, and a ſtrong Caſtle built by King *Henry the Firſt*, where (in the Collegiate Church of the *Abbey*) himſelf and Queen, with *Maud* their Daughter, were interr'd; both which now lie in their ruins.

Windſor.

New Windſor, pleaſantly ſeated near the banks of the *Thames*, and adjoining to a *Park* and *Forest* well ſtored with Game; 'tis a fair, large, well frequented

quented and inhabited Town Corporate, governed by a *Major* and other ſub-Officers, ſendeth *Burgeſſes* to Parliament, and hath a very good Market for Proviſions on *Saturdays*. This Town is of great note for its ſtately *Caſtle* and *Royal Palace* of his Maſteſty, ſeated on a great eminency, wherein is a *Chappel* for Devotion, a *Colledge* for Learning, and an *Alms-houſe* for decayed Gentle- men, called the *poor Knights of Windſor*; and famous is this *Caſtle*, not only for giving birth to ſo many of our Kings and Princes, but for being the place where the ceremony of the *Knights of the Garter* is ſolemnized on *St. Georges* day.

Nigh unto *New Windſor* is *Old Windſor*, a Town of greater antiquity, though not of ſo much ſplendor.

Newbury, well ſeated on the *Kenneſ*, and in a *Champaign Plain*, a large, well inhabited and frequented Town Corporate, governed by a *Major*, *Aldermen* and *Burgeſſes*; beautified with a ſpacious Market-place and well built Market-houſe, ſufficiently ſerved with *Corn*, *Wheats*, *Fish*, and *Potels*, on *Thursdays*. This Town had its riſe out of the ancient *Spina*, now a ſmall Village near adjoining, and called *Speenhamland*, and is of note for its *Jack of Newbury*, who got ſo great an eſtate by *Clothing*, which this Town at preſent is very conſiderable for.

Newbury.

Wallingford, a Town of great antiquity, and in times paſt very ſtrong and large, containing four Pariſh Churches within its Walls, which took up a mile in circuit. 'Tis at preſent a large Town Corporate, governed by a *Major*, *Aldermen* and ſub-Officers, enjoyeth large Immunities, and ſendeth *Burgeſſes* to Parliament. 'Tis commodiouſly ſeated on the banks of the *Thames*, over which it hath a fair *Stone-bridge*: its *Market-houſe* or *Guild-hall*, with a *Free-School* lately erected, is a fine pile of building, where the *Major* and *Juſtices* keep their Courts. It enjoyeth a good Trade for *Mault* and *Corn*, which is transported in Barges to *London*; and its Markets, which are on *Tuesdays*, and *Fridays*, which is the chief, is very conſiderable for Grain and Proviſions.

Wallingford.

Abington, the Shire-Town, ſeated on the banks of the *Thames*, over which it hath a Bridge; a Town of good antiquity and note in former time for its rich *Abby*. 'Tis at preſent well inhabited, frequented and traded unto, eſpecially for its *Mault*; is governed by a *Major*, enjoyeth ſeveral Priviledges, ſendeth a *Burgeſſ* to Parliament, and hath two Markets weekly on *Mondays* and *Fridays*, which are well ſerved with *Corn*, *Mault*, and *Proviſions*.

Abington.

This County is adorned with many fair and ſtately Buildings, hath been ſtrengthened with 6 *Caſtles*, and graced with three of his Maſteſties Houſes. In this Shire is the Vale of *White-horſe*, one of the fruitfulleſt Vales in *England*.

BEDFORD, a County for the generality of a fertile Soil both for *Tillage* and *Paſturage*; the North and North-eaſt parts being of a deep Clay, the South a *Chiltern*, and the miſt a *Sandy-ridge* of Hills well clothed with Wood. 'Tis a Country well inhabited and full of Gentry, which is occaſioned through its vicinity to the Counties of *Lincoln* and *Huntington*, which in ſome places are troubled with unhealthy Fogs. The chief Rivers that water it, are the *Oweſe* and the *Iwell*.

This County is ſepered into 9 Hundreds, in which are numbred 116 Towns, beſides 59 *Endſhips*; and of theſe Towns 10 have the conveniency of Markets.

Bedford, the Shire-Town, pleaſantly ſeated in a rich Soil and on the *Oweſe*, which divideth it in the miſt, but joyned together by a fair *Stone-bridge*, which for the prevention of paſſage hath two *Gate-houſes*; it was formerly ſtrengthened with a *Caſtle*, but in its place is now a *Bowling-green*, much reſorted unto by the Gentry. The Town is large, numbring 5 *Pariſh Churches*, is well inhabited, and its Markets (which are on *Tuesdays* and *Saturdays*) are well reſorted unto; that on *Tueſdays* being conſiderable for living Cattle, and that on *Saturdays* as great for *Corn* and Proviſions. For Civil Magiſtrates, it

County of
Bedford de-
ſcribed.

Bedford.

is governed by a *Major*, 2 *Bayliffs*, 2 *Chamberlains*, a *Recorder*, and other sub-Officers; enjoyeth several Immunities, and sendeth *Burgesses* to Parliament.

Dunstable.

Dunstable, seated on a Hill in a dry Chalky-ground; yet by reason of a large Pond of standing-water in every one of the 4 Streets of the Town, the Inhabitants find no want. 'Tis a place of great antiquity, and was of note in the time of the *Romans*, as appears by the *Coins* in the adjacent fields, oft digged up, which the Inhabitants call *Madning-money*; and is at present of some note for the great abundance of *Larks* here caught. It took the name of *Dunstable* from one *Dun*, a notorious Robber, that used to pester these parts. The Town is fair, well inhabited, full of *Inns*, as seated on the high Road, and its Market, which is on *Wednesdays*, is very considerable for *Corn*, *Cattle*, and *Provisions*.

Biggleswade.

Biggleswade, seated on the *Iwell*, which falleth into the *Ouse*, over which it hath a fair *Stone-bridge*, and on the Road from *London* to *York*, which hath occasioned it to be well provided with *Inns* for the reception of Passengers, and its Market on *Tuesdays* is at present very considerable for *Grain*, *Cattle*, *Milch-kine*, and *Provisions*.

At *Sande* and *Chesterfield*, near adjoining, now a *Warren*, stood the famous City of *Salena* of the *Romans*; which, by the ruins of its Walls (in many places yet to be seen) makes it to have been of a large extent.

Buckinghamshire described.

BUCKINGHAM, a County for the generality of a fertile Soil; it is divided into two parts; that towards the South and East (which riseth up into Hills, which are sufficiently clothed with *Wood*) is called the *Chilterne*; the other, lying Northwards, (being plain) is called the *Vale*, and is the most fruitful for Tillage and Pasturage, feeding great abundance of *Sheep* and *Cattle*. It is well watered with the *Ouse*, and the *Thames*. The ancient Inhabitants were the *Catejulani*, who yielded themselves to *Cesar*, and upon the *Saxons* subduing the *Romans*, it became part of the Kingdom of the *Mericians*.

This County is severed into 8 *Hundreds*, in which are 185 *Parish Towns*, of which 13 have the convenience of *Markets*.

Buckingham.

Buckingham, well seated on the *Ouse*, which almost encircles it, over which it hath 3 fair *Stone-bridges*, and in a low fruitful ground. 'Twas once a Town of good strength, and of some note for its stately *Prebend-house*, and its *Chappel* of *St. John Baptist*, founded by *Tho. Becket*; now made use of for a *Free-School*. It is at present a fair and well inhabited *Town Corporate*, governed by a *Bayliff*, 12 principal *Burgesses*, a *Steward*, &c. is dignified with the title of an *Earldom*, hath the election of *Parliament men*, and its Market on *Saturdays* is well served with all manner of *Flesh*, *Corn*, and other *Provisions*.

Stony-Stratford.

Stony-Stratford, seated on the *Ouse*, a Town of great antiquity, being the *Romans* *Latoradum*, and built upon the ancient Causeway called *Watling-street*, and is at present of a good largeness, containing 2 *Parish Churches*, is well accommodated with *Inns*, and hath a considerable Market for *Corn*, *Flesh*, and some *Fish*, on *Fridays*.

Aylesbury.

Aylesbury, seated on a branch of the *Tame*, and in a fertile *Vale*, so called, which feeds store of *Sheep*. It is a fair and well inhabited *Borough-Town*, electing *Parliament men*, is honoured with the Title of an *Earldom*, is the usual place where the *Assizes* for the County are held, having in the midst of the Town a fair *Shire-hall*, and its Market on *Saturdays* is very well served with *Corn*, *Cattle*, and *Provisions*.

High Wickham.

High Wickham, well seated in a rich Soil, a *Major Town*, which for largeness and fair buildings, is not inferior to any in the County, of note for its *black Bone-Lace* here made, and its Markets on *Fridays* is very great for *Corn*, *Flesh*, *Fish*, and all *Provisions*.

CAM

CAMBRIDGESHIRE, a County of a different Soil, the Southern part being Champain and indifferent fertile, bearing excellent *Corn* and *Barley*, of which the Inhabitants make abundance of *Mault*: and here is gathered good store of *Saffron*, the dearest commodity that *England* produceth. And the Northern part (called the Isle of *Ely*, as made so by the *Ouse* and its branches) is *Fenny*, and not so pleasant and wholsome to live in as the Southern; but is recompensed with rich *Pastures*, which feed abundance of *Cattle*, which are very profitable to the Inhabitants, and affords also great plenty of *Fish* and *Fowl*.

This County is severed into 17 *Hundreds*, of which 14 are in the Southern part, and 3 in the Northern, called the Isle of *Ely*; in which said *Hundreds* are 162 *Parishes*, and for the accommodation of its Inhabitants is traded unto by 8 *Market Towns*.

Cambridge, seated in an Air somewhat unhealthful, occasioned through the *Fenny-grounds* near adjoining, and on the River *Cam* or *Grant*, (navigable for *Barges*) which separates it into two (but unequal) parts, which are joyned together by a *Bridge*. 'Tis a place of great antiquity, being said to derive its name from *Cantabur*, a *Spaniard*; who about 375 years before the Incarnation of *Christ* had there settled the *Muses Seat*; but more certain it is, that *Sigilbert* the first Christian King of the *East Saxons* established here several *Schools*; and of no less fame for its University or Seminary of true Learning, which is its chiefest ornament, being adorned with 16 *Colleges* and *Halls*, many of which are superb Buildings; and by reason of these *Seminaries* it is a place of a large extent, numbring 14 *Parish Churches*, is beautified with well built Houses, its Streets are paved and well ordered, is well inhabited, enjoyeth a good Trade, and its Market on *Saturdays* is sufficiently furnished with *Provisions*, which are had at easie rates. It is a *Town Corporate*, endowed with ample Immunities, and sendeth 4 *Burgesses* to Parliament, viz. two for the *University*, and two for the *Town*.

Nigh unto *Cambridge* Southwards, are *Gogmagog-Hills*, which are of a great eminency, and yet retain the remembrance of the *Danish* Station; and of these Hills the Country people tell fine stories.

Ely, seated in a fenny and waterish place, and on the banks of the *Ouse*, which rendreth it very unhealthful; it is a City of more antiquity than beauty, being but meanly built, nor overmuch frequented or inhabited, and would be far less, were it not for being the See of a *Bishop*, whose Palace is so ruinous, that it is uninhabitable; but its *Cathedral* or *Minster* is a lofty structure, and beautified with a stately Lanthorn of curious Architecture. It is a City that enjoyeth ample Immunities, for in the Isle of *Ely* the *Bishop* hath all the rights of a *Count Palatine*, and beareth chief sway therein, appointing a *Judge* for the hearing of Causes within the said Isle; he also holdeth *Assizes*, *Goal-delivery*, and *Quarter-Sessions* of the Peace, and hath his chief *Bayliff* and other Officers; and although the City is but meanly inhabited, yet its Market on *Saturdays* is well served with *Provisions*.

New-Market, seated part in this County and part in *Suffolk*, and in a large and pleasant Heath, so called; a place of some largeness, containing two *Parish Churches*, and is well inhabited and much resorted unto by the *Gentry*, by reason of its commodious situation for *Horse-races* and *Hunting*, being both Regreations that his Majesty taketh so great delight in, that he hath there his Palace for his reception; which adds no small advantage to the Town, often honouring it with his Royal presence. Its Market is on *Tuesdays*, which is not very considerable by reason of its vicinity to *Bury* and *Cambridge*.

Caxton, seated in the Clay, and on the North-road; a small Town, and hath a little Market on *Tuesdays*.

Roydon, seated on the high Road to *Huntington* in a bottom amongst Hills, and part in this County and part in *Hartfordshire*; It is a large, well inhabited Town, and hath a considerable Market on *Wednesdays* for *Provisions*, especially for *Mault*, here, and in parts adjacent, made in great quantities.

CHE S

Cheshire described.

CHESHIRE, a County Palatine, of a rich and fertile Soil both for Tillage and Pasturage, feeding abundance of Cattle, and affording plenty of Corn, Fish, (especially Salmon) Fowl, Butter, Cheese, and Salt, which is their staple commodity, and here had in great plenty: and out of the Rocks and Quarries, broad Slates and fair Stones for building are dug; as are Mill-stones out of *Moucop-Hill*. It is well furnished with Timber and Fuel from its Woods and Forests of *Delamer* and *Maxfield*; is plentifully watered with Rivers, Meers, and Pools, hath several Heaths and Mosses. The ancient People were the *Cornavii* of *Ptolomy*, and afterwards became part of the Kingdom of the *Mercians*.

In this County are seated 86 *Parish Churches*, besides 38 *Chappels of Ease*, and hath Traffick with 13 *Market Towns*.

Chester.

Chester, or *West-Chester*, a City of great antiquity, said to be raised from the Fort of *Ostorius*, Lieutenant of *Britain*, for *Claudius* the Emperour, and of a pleasant situation on the *Dee*, over which it hath a fair *Stone-bridge*, sustained by eight Arches, at each end of which is a Gate; but the Channel is now so choaked up with *Sand*, that it is scarce navigable for small Vessels, so that all Ships now come to a place called *New-Key*, about 6 miles distant. Its form is *Quadrangular*, and taketh up about two miles in circuit within its Wall, on which are 7 Watch-Towers, and which gives entrance by 4 Gates and 3 Posterns, and of these Gates the *East-Gate* is esteemed one of the finest liest Gates in *England*. For its further defence it hath a large *Castle*, seated on a Rocky Hill, where the *Shire Hall* is (which something resembleth that of *Westminster*) where all matters concerning the County Palatine are tried by their peculiar Officers. The City is large, numbring 10 *Parish Churches* beside its *Minster* or *Cathedral*, a large structure, adjoining to which is the *Bishops Palace*; it is beautified with divers fair Buildings, both publick and private, is graced with large and well ordered Streets, is well frequented and inhabited by *Gentry* and *Tradesmen*, and the more for being the place where the Courts Palatine and *Affises* are kept, as also for being the usual place of taking Shipping for *Ireland*, with which it hath a great intercourse; and hath a considerable Trade. It is governed by a *Major*, 2 *Sheriffs*, 24 *Aldermen*, a *Recorder* and *Sub-Officers*, enjoyeth ample Immunities, and sendeth *Burgeses* to *Parliament*, which no other Town in the County doth. It is well served with Provisions, for besides its *Shambles*, it hath two considerable Markets weekly, on *Wednesdays* and *Saturdays*.

Not far from this City is the Forest of *Delamer*, where *Edelsted* the *Mercian Lady* built a small City, long since reduced to ruins; which place is now called *The Chamber in the Forest*.

Nantwich.

Nantwich, seated on the *Wever*, the largest and best built Town next to *Chester*, in the County, and is graced with a goodly spacious Church. It is a place well inhabited and frequented, chiefly occasioned for its *Salt-pits* or *Salt-wich*, for the making of white Salt, here had in great plenty; and its Market, which is on *Saturdays*, is sufficiently provided with all Provisions and necessities, especially Corn and Cattle.

Malpas.

Malpas, situate on a great eminency, and on the River *Dee*, a fair Town, containing 3 Streets, which are paved and well ordered; it hath an *Hospital* and *Grammar School*, and its Market on *Mondays* is of good account.

Middlewich.

Middlewich, seated between *Nantwich* and *Northwich*, a large Town, containing several Streets and Lanes, its chief place being called the *King-Mexon*. The Town is of note for its *Salt-pits*, and making of Salt, and hath a good Market for Provisions on *Saturdays*.

Maxfield.

Maxfield, or *Macclesfield*, seated near a Forest so called; a very fair and large Town, graced with a goodly Church, which hath a high *Spire Steeple*, adjoining to which is a *Colledge*. The Inhabitants drive a great Trade in making of *Buttons*, and its Market, which is on *Mondays*, is well served with Corn, Provisions, &c.

CORN-

Cornwall described.

CORNWALL, encompassed on all parts, except on the East (by *Devonshire*) with the Sea, which thrusts forth its several Arms, and receives those many Rivers, which plentifully water the County; as the *Foy*, *Newton*, *Dranes*, *Lo*, *Fish*, *Seaton*, *Loe*, *Linex*, *Tavy*, and *Tamer*. It is of a sharp, but healthful Air, generally very Hilly, consisting ordinarily of Rocks and *Shelvers*, but crusted over with a shallow Earth, and more inclined to sterility than fertility; but the parts towards the Sea, and the enclosures about the Towns, through the industry of the Husbandman are more fertile, bearing good crops, and feeding store of Cattle.

It affordeth great store of game both for the Hawk and Hound; and its Seas and Rivers, plenty of several sorts of Fish and Fowl, as well those common to other Counties, as appropriate to themselves. In the bowels of the Earth are Quarries of sundry sorts of useful Stones and Slates for building, also Copper, precious Stones, called *Cornish Diamonds*; but chiefly *Tin*, which is here found in great plenty to the great enrichment of the Inhabitants, who, as to their Names and Language hold great affinity with the *Welsh*.

The ancient Inhabitants were known to the Romans by the name of the *Dannovii's*, and became afterwards part of the Kingdom of the *West Saxons*.

This County is severed into 9 *Hundreds*, in which are numbred 161 *Parish Churches*, and hath intercourse of Traffick with 23 *Market Towns*.

Lisshon, seated on an eminency, and on a branch of the *Tamer*, a large Town Corporate, governed by a *Major* and his Brethren, and amongst other Immunities electeth *Parliament men*; 'tis a place well inhabited, enjoyeth a good Trade, and the more as being the place where the *Affises* are held; and its Market, which is on *Saturdays*, is well served with Provisions. Adjoining to this Town is an ancient *Castle*, seated on a great eminency, and encompassed at the top with a treble Wall, where there was a *Colledge of Canons* and *Secular Priests*. The lower part now compriseth a decayed *Chappel*, a large Hall, and a place made use of for the Common Goal.

Liskerd, a Town Corporate, governed by a *Major*, 8 *Magistrates*, a *Recorder*, and other *Sub-Officers*, electeth *Parliament men*, hath an eminent Free School, and is a large, well inhabited and frequented Town, whose Market on *Saturdays* is well served with Corn and all sorts of Provisions, and the Inhabitants drive a considerable trade for *Tarn* every Market-day.

Bodman, seated in a bottom between two high Hills, which render it not very healthful, especially to new Comers; it is large, an indifferent well built and inhabited Town Corporate, governed by a *Major*, sendeth *Burgeses* to *Parliament*, and hath a great Market on *Saturdays* for Corn and Provisions.

Lisshyel, or *Liswithiel*, seated on the *Foy*, not far from its fall into *Foy-haven*, which formerly brought up Vessels to the Town; but its Channel being choaked up (by reason of the *Tin-Mines*) is a great obstruction to its Trade. It is a Town Corporate, governed by a *Major* and his Brethren, electeth *Parliament men*, hath its part in the coynage of the *Tin*; (but the Goal for the whole *Stannery*, and the keeping of the Courts is only here kept) and hath a small Market on *Fridays*.

Foy, so called from its Haven, or Arm of the Sea on which it is seated, being strongly fortified at the entrance of the Haven with *Block-houses*, and in times past was a place very considerable for Shipping and Traffick; its Market, which is on *Saturdays*, is very well served with Corn and Provisions.

West-Loe, seated on a navigable Creek, over which it hath a fair Bridge, which leadeth to *East-Loe*, more commodiously seated, where there is an indifferent good Market on *Saturdays*. They are both Towns Corporate and send *Burgeses* to *Parliament*. The chief benefit arising to the Inhabitants of these Towns, is their *Fishing*.

Saltafb, seated on the descent of a steep Hill, a pretty large Town Corporate, consisting of 3 Streets, is governed by a *Major*, and 9 *Aldermen*, enjoyeth large Immunities, and sendeth *Burgeses* to *Parliament*. Its Market is on *Saturdays*, which

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which of late is much decayed to what it was; by the Inhabitants gain well by their *Mauls* and good *Breeds*. Not far from this Town is *Trematon Castle*, once a place of great note, in which is kept the *Trematon Court*; wherein all Causes within the said Fee are tried; as also the Prisoners are kept. *Padstow*, a Sea-Port Town, of some Trade by reason of its commodious situation with *Ireland* and were its Haven secure, it would be of greater account. It is a *Borough Town*, electing *Parliament men*; and hath a good Market for Corn and Provisions on *Saturdays*. *Falmouth*, at present a very large and well inhabited *Town Corporate*, governed by a *Major* and sub-Officers, enjoyeth a good Trade; is well resorted unto by *Shipping*, where there is a Key intended shortly to be built; and hath a very considerable Market for Corn and Provisions on *Thursdays*. The Haven whereon this Town is seated, and beareth its name, is very commodious for *Ships*, and so capacious that 100 Sail of *Ships* may safely ride at Anchor. And this Haven, with those of *Milford* and *Plimouth*, are the chiefest in the Kingdom. On the West side and at the very entrance of this Haven is *Pendennis Castle*, seated on a Hill so called; and on the other side, (but of a lower situation) is *St. Moez* or *Maudit*, both which are a great security to the Coast and Haven.

Truro, seated on a branch of *Falmouth Haven*, at present the head Town in the County, being a fair, large, well inhabited and traded *Borough Town*, privileged with a *Majoralty*, sendeth *Burgesses* to *Parliament*; hath the coynage of the *Tin*; is a place where the Western Sessions are held; and its Markets on *Wednesdays* and *Saturdays* are well served with Provisions, &c. *Rahin*, seated also on a Creek of *Falmouth Haven*, a very considerable *Town Corporate*, electing *Parliament men*, and hath weekly 3 Markets, viz. on *Wednesdays*, *Fridays* and *Saturdays* for Corn; and on *Saturdays* for Provisions.

Helford, seated on the *Lowe*, between which and the *Sea* there is a great beach or bar of Sand. It is a well inhabited and frequented *Town Corporate*, governed by a *Major* and *Aldermen*, electeth *Parliament men*; and its Market on *Saturdays* is well served with Provisions; and the two Markets before *Christmas* are so great, that they may be reckoned as *Fairs*.

Near this Town is *Godolphin Hill*, well known for its rich *Tin Mines*. *Penzance*, seated on *Monts Bay*, and in an Inlet thereof; a very good traded Town, and hath a considerable Market for all Provisions, especially *Fish*, on *Thursdays*.

St. Ives, or *St. Ithes*, seated on an open Bay so called, chiefly frequented by *Fishermen*, for the taking of *Pilchards* and other *Fish*, which are here plentifully caught. It is a *Town Corporate*, governed by a *Major*, a *Justice*, and 12 *Aldermen*, sendeth *Burgesses* to *Parliament*; and hath 2 Markets weekly, viz. on *Wednesdays* and *Saturdays*.

It is observed that Men live here to a very great Age, and are stronger, hardy, and addicted to wrestling, pitching the Bar, and other boisterous sports, more than any other *English men*.

By *Helford* is a great Rock lying upon the ground, the top whereof is hollow and filled with water, which ebbs and flows as the *Sea* doth. There is a very great Rock in this Shire called *Mainambr*, which rests upon other smaller Rocks, which with the push of a finger may be moved; but cannot be moved out of its place by all the Art men can use.

CUMBERLAND, a County far engaged Northwards, is very Mountainous, and much inclined to sterility; yet not without many fertile Valleys, both for *Fillage* and *Pasturage*. It hath an Air very sharp, and would be more, were it not for the high Hills that break off the Northern and Western Storms. In the bowels of the Earth are rich Mines of *Copper* in great plenty; also those of *Iron*, *Lead*, *Black-lead*, *Coal*, and some of *Silver*; and the *Sea*, and large *Lakes* and *Meers*, plentifully furnish the Inhabitants with *Fish* and *Fowl*. And

Country of
Cumberland
described.

And besides these Commodities this County produceth several Manufactures, amongst which, heretofore *Fustians* and now *Linnen-cloth* and coarse *Broad-cloths* in great plenty. The Mountains of most note are *Black-koum*, *Hard-knot*, *Wrey-nose*, *Skiddow*, and *Croisfell*, &c. It is well watered with *Rivers*, and hath many *Lakes* and *Meers*.

This Shire of all others in *England* sheweth the most *Roman* Antiquities, for being in the utmost limits of their possessions it was always secured by their Garrisons, and defended by that admirable Wall called the *Piſſs Wall*, which ran from *Sea* to *Sea* about 100 miles, and was 8 foot broad and 12 foot high, and having at every 1000 paces a Watch-Tower erected, in which *Souldiers* were kept; and on this Wall grows the *Vulnerary Plant*. And being thus in the confines of *Scotland*, it was exceedingly strengthened with *Castles*, having about 25 publick ones, besides the Houses of the *Nobility* and *Gentry*, which were generally built *Castle-wise*.

It is severed into 5 *Woads*, in which are 58 *Parish Churches*, besides divers *Chappels* of *Ease*, and hath 15 *Market Towns*.

Carlisle, a City of great antiquity, and no less pleasantly than commodiously seated at the influx or meeting of several *Rivers*, viz. the *Eden*, *Gaſſa*, and *Petterill*, which on all parts, except the South, encompass it; and for its further defence, it is fortified with a strong and large *Castle* and *Citadel*, and fenced about with a strong Wall, first built by *Egfrid King of Northumberland*, which was defaced by the *Danes*, and again rebuilt by *King Rufus*. Its Houses are fair and well built, is beautified with a *Cathedral Church* of curious workmanship, it enjoyeth several Immunities, sendeth *Burgesses* to *Parliament*, is governed by a *Major*, 12 *Aldermen*, 2 *Bailiffs*, and other sub-Officers. It is a place well inhabited, and traded unto chiefly for *Fustians*; and its Market, which is on *Saturdays*, is very considerable for *Corn*, *Wool*, *Provisions*, and several Country Commodities.

Cockermouth, seated between the *Derwent* and the *Coker*, which almost encompass it, over which are two fair *Stone-Bridges*, and between two Hills, upon one of which standeth the *Church*, a fair building, and upon the other a spacious and stately *Castle*. It is a well inhabited *Borough Town*, graced with fair Buildings, enjoyeth a good Trade, especially for coarse *Broad-cloths* here made, hath the election of *Parliament men*, and its Market, which is on *Mondays*, esteemed the best in the County for *Corn*, next to *Perith*. Here is a Custom at their *Fairs*, holden at *Whisfontide* and *Marlemaſſ* for the hiring of *Servants*, to which end all such that want *Servants*, or *Services*, do hither come; the like is observed at *Perith*, and most of the *Market-Towns* in the County.

Whithaven, seated on a Creek of the *Sea*, indifferent commodious for *Shipping*, which makes it to be well inhabited and frequented by *Tradesmen*, especially by *Fishermen*, and those that are related to *Sea-Affairs*, who drive a good Trade to *Ireland*, *Scotland*, *Chester*, *Bristol*, and other parts, having a *Custom-house* and several *Vessels* belonging to the Town, whose chief Trade is for *Salt* and *Coals*, here plentifully digged up. Its Market is kept *Thursdays*.

Ravenglass, a well built *Maritime Town*, couched betwixt the *Rivers Irr, Esk*, and *Mite*, with which the *Sea* doth encompass 3 parts of it, and is a good road for *Shipping*, which makes it to be a place of some Trade, and hath a Market on *Saturdays*.

Keswick, seated in a Valley, hemmed in with Hills and the Mountains called *Derwent Fells*, wherein are good *Copper Mines*, and not far from the Town is dug up *Black-Lead*, or *Wadd*, in great plenty. The Town was formerly of greater account than now it is, when the *Mineral-men* had here their *Smelting-houses*, being at present not very considerable. It hath a Market on *Saturdays*, chiefly for *Meal*, *Flesh*, *Butter*, and *Cheese*.

Perith, seated on a Hill called *Perith Fell*, and near the *Rivers Eimont* and *Lowther*; a large, well built and inhabited Town, esteemed the second in the County, although neither a *Borough* nor *Town Corporate*; it is adorned with

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Carlisle

Cockermouth

Whithaven

Ravenglass

Keswick

Perith

a fair Church and a large Market-place, which every Tuesday is very much resorted unto; being considerable for Corn, living Cattle, divers Commodities and all sorts of Provisions in great plenty.

Derbyshire described.

DERBYSHIRE, a Midland County, but inclined towards the North, which makes it to be of a sharp Air, especially upon the Peak Mountains. The Soil is generally fertile, chiefly the South and East parts, which for the most part are enclosed and improved, yielding good Corn and Grass, and hath also store of Coal and Iron-stone. The North and West parts are very hilly and stony, and not so fertile, except in Lead-Ore, in which it much abounds, yet not without some rich Valleys; and on the Hills are bred good (though not large) Sheep in great abundance. For Fuel, it is not beholding to Wood, having such great plenty of Coal, that it supplies the defects of divers neighbouring Counties.

It is well watered with Rivers, viz: the Trent, Derwent, Dove, and Wye, which are the chief, and are passed over by about 21 Stone-bridges, some of which are of considerable note; as Burton over the Trent, sustained by 35 large Stone-Arches; Swarkeston-bridge over the same River, reputed near a mile long, but much of it is rather a Causeway than a Bridge; Monks-bridge over the Dove, and St. Marys-bridge, at Derby, over the Derwent, which River severeth the County into East and West, and it is observed that on the East-side Coal is generally dug, and on the West, Lead.

The Inhabitants were the Coritani of the Romans, and was afterwards part of the Kingdom of the Mercians.

It is severed into 6 Hundreds, and contains 106 Parish Churches, besides several Chapels of Ease, and is traded unto by 9 Market Towns.

Derby, well seated on the Derwent, over which it hath a goodly Stone-bridge; a Town of good Antiquity, and is at present a very large, populous, well frequented and rich Borough Town, numbring 5 Parish Churches, of which All-Saints, which is the chief, is a curious structure, and beautified with in with several Monuments. It is a Borough Town, electing Parliament men, is honoured with the Title of an Earldom, enjoyeth ample Immunities, is governed by a Major, 9 Aldermen, 14 Brethren, 14 Common-Council, a Recorder, Town-Clerk, &c. is well traded unto, especially for Barley, which they make into Mault, which finds good vent, and its Market, which is on Fridays, is very considerable for Cattle, Corn, and all sorts of Provisions; besides a small Market on Wednesdays and Saturdays. Here is lately built a fair Hall of Free-Stone as the Counties charge, where the Assizes are constantly kept.

Chesterfield, pleasantly seated between two small Rivers, and in a good Soil, a Borough Town of great antiquity, is dignified with an Earldom, enjoyeth large Immunities, is governed by a Major, 6 Aldermen, a Recorder, 6 Brethren, 12 Counsellors, &c. and hath weekly two Markets on Tuesdays and Saturdays, which are very considerable for Corn, Lead, and most Country Commodities.

Wickworth, seated in a Valley, is a pretty large and populous Town, beautified with a fair Church, hath a Free-School and Alms-houses, and its Market on Tuesdays is well served with Provisions and Apples, especially for Lead, where the Merchants have their meetings for the Sale thereof.

Bakewell, seated amongst Hills and on the banks of the Wye, an indifferent large Town, and hath a good Market on Mondays for Lead and Provisions.

In the Peak Forest is a Well that ebbs and flows 4 times in one hour, keeping its exact Tides. At Buxton, out of a Rock, in 24 foot compass, 9 Springs arise, of which 8 are warm and one cold; and the Waters are found very good to bath in, and for the Stomach.

And in this County is Eldon-hole, being a Cave worthy of notice.

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DEKONSHIRE, of a sharp and healthful Air, very hilly and generally of an ungrateful Soil, without great pains and charges in manuring it, yet is it not without many fertile Valleys, and its sterility is recompensed by the rich Mines of Tin and Lead; as also by the great plenty of Herrings, Pilchets, and other Fish, taken on its Sea-Coast, from which the Inhabitants reap good profits; which, with its Clothings, Saerges and Bone-lace, are the chief Commodities of the County.

The ancient Inhabitants were the Damnonii, and was afterwards part of the Kingdom of the West-Saxons.

It is very well watered with fresh Streams, as the Exe, Tamar, Tawe, Tawer, Pline, Dart, Turridge, Tinge, Plime, Culme, and Ottery, which are found very advantageous to the Inhabitants.

It is divided into 33 Hundreds, in which are 394 Parishes, and for the accommodation of its Inhabitants, hath about 30 Market Towns.

Exeter, a fair, sweet and well compacted City, of great Antiquity, and no less pleasantly than commodiously seated on the top of an easie Ascent, and on the Exe (whence it took its name) over which it hath a fair Stone-bridge. 'Tis a place of a good largeness, containing within its Wall and Ditches, about a mile and half in circuit, in which and in its Suburbs (which are large) are numbred 15 Parish Churches besides its Cathedral or Minster, founded by King Athelstan, a fair and beautiful structure. It enjoyeth a considerable Trade, being much inhabited and resorted unto by Merchants and Tradersmen, having several Ships and Vessels belonging unto them, and is in a flourishing condition, enjoying ample Immunities, sendeth Burgeses to Parliament, is honoured with the Title of an Earldom, is governed by a Major, 24 Aldermen or Brethren, a Recorder and other sub-Officers, and hath two very considerable Markets weekly, viz: on Wednesdays and Fridays for Provisions; and Saturdays in great abundance.

Plymouth, seated on the Plime, and near the Tamer, at both their Influxes into the Sea, which from a poor Fishing-Village is become a very fair, large, well inhabited and frequented Town, resembling rather a City than a Town, although it hath but two Parish Churches; 'tis a place of great importance by reason of its commodious Haven and excellent Port, which doth occasion it to be so well resorted unto by most Ships both outward and inward bound, and is of great strength, as well by Nature as Art, being defended by a strong Fort, a Cittadel, and other Fortifications. It is a Borough and Town Corporate, governed by a Major, Aldermen, and Common Council, hath the election of Parliament men, enjoyeth a great Trade for most Commodities, and its Markets on Mondays and Thursdays are extraordinary well served with all sorts of Provisions, as also have living Cattle.

Dartmouth, seated on the Dart, near its fall into the Sea, where it hath a commodious Haven; a large, well inhabited, frequented and traded Port-Town, containing 3 Parish Churches, and its Market on Fridays is very well served with Provisions. 'Tis an ancient Town Corporate, is governed by a Major and his Brethren; and amongst its Immunities sendeth Burgeses to Parliament.

Totnes, seated on the Dart, and on the descent of a Hill; a Town of great antiquity, and of greater account than now it is; yet doth it retain several of its Immunities, sendeth Burgeses to Parliament, and is governed by a Major and his Brethren. The Town is large and hath a very great Market on Saturdays for all live Cattle, Corn, Mault, and Provisions both Fleish and Fish.

Asheburton, seated in a rich Soil under the Moor, a large Borough Town, composed of several Streets, is beautified with a fair Church, electeth Parliament men, and hath a very good Market for Corn, Cattle, Sheep, and Provisions on Saturdays.

Okehampton, seated betwixt the River Okement and a branch thereof, a Borough Town, which electeth Parliament men, is governed by a Major, Burgeses, Recorder, and sub-Officers, and hath a very good Market for Corn, Provisions and Tarn, on Saturdays.

Bedford.

Derbyshire described.

Exeter.

Plymouth.

Dartmouth.

Totnes.

Asheburton.

Okehampton.

Bedford.

Bedford, commodiously seated for the reception of Vessels on the *Towridge*, over which it hath a large *Stone-bridge* of Arched-work; consisting of 24 *Piers*. 'Tis a large, well inhabited and traded Town, and its Market on *Tuesdays* is well served with Corn and Provisions.

Barnstable.

Barnstable, commodiously seated on the *Tawe*, over which it hath a large *Stone-bridge*: 'Tis a fine *Borough Town*, which electeth *Parliament men*, is a place of some Trade, and hath a considerable Market on *Fridays* for Cattle, Corn, and Provisions.

South-Moulton.

South-Moulton, seated on the *Moul*, which falleth into the *Tawe*, a pretty good Town, and hath a considerable Market on *Saturdays* for Corn and Provisions.

Tiverton.

Tiverton, seated on the *Ex*, over which it hath a fair *Stone-bridge*, where the *Leman* falleth in. It is a large *Town Corporate*, electing *Parliament men*, is governed by a *Major*, 12 *Burgesses*, and other sub-Officers; is a place of good account for its Clothings here made, and hath a Market on *Tuesdays*, which is very well served with Provisions, &c.

Crediton.

Crediton, seated betwixt two Hills, and in a rich Soil, once the See of a Bishop, till removed to *Exeter*. It is a place of a pretty largeness, being composed of two Towns, the one called *East Town* and the other *West*, is beautified with a very fair Church built *Cathedral-wise*, to which belongeth a *Free School*, which hath 12 Governours; it is well inhabited, enjoyeth a good Trade for its *Seorges* here made, and its Markets on *Saturdays*, for Corn and Provisions, is esteemed one of the best in the County.

Dorsetshire described.

DORSETSHIRE, of a healthful Air and fruitful Soil; the Northern part (which is severed from the South almost by a continual ridge of high Hills) is somewhat flat, abounding with rich Pastures, and is well watered with fresh Streams, which hath induced many of the Gentry to settle here, although the Winter season is very dirty and troublefom to the Traveller; which inconvenience the South part is freed from; as consisting of Hills and Downs, which are overspread with flocks of *Sheep*; yet it is not without divers Valleys, in which (for the most part) the Towns and Gentlemens-Houses are seated.

It is well watered with Rivers, the chief of which are the *Frome* and the *Stower*, which, with the *Sea*, do plentifully furnish the Inhabitants with *Fish* and *Fowl*.

The chief Commodities that this County produceth are *Cattle*, *Sheep*, *Corn*, *Wool*, of which the Clothiers make *Kerfies*; *Wood*, *Hemp*, *Tobacco*, *Flay*, *Free-Stones*, &c. And for the better support of their Traffick, they have several good Haven-Towns, as *Lime*, *Weymouth*, *Pool*, &c.

Its Inhabitants, known to the *Romans*, were the *Durotriges*; and when the *Saxons* became Masters of the Island, it became part of the Kingdom of the *West Saxons*.

It is divided into 5 *Divisions*, and those into 29 *Hundreds*, in which are seated 248 *Parish Churches*, and for accommodation of its Inhabitants, hath Traffick with 18 or 19 *Market Towns*.

Dorchester.

Dorchester, a Town of great antiquity, and well known to the *Romans*, where they had their Station; it is pleasantly seated on the South-side of the *Frome*, and on the *Roman* Causeway called *Foss-way*, at present the chief in the County (though not so large as in former time, as appears by the circuit of its then Walls, first thrown down by the *Danes*), being neatly compacted with well built Houses, hath 3 fair Streets and as many *Parish Churches*, hath an eminent *Free School*, and an *Alms-house*. 'Tis a *Town Corporate*, governed by 2 *Bayliffs*, 8 *Aldermen*, a *Recorder*, and other sub-Officers, electeth *Parliament men*, and giveth title to the Right Honourable *Pierrepont*, Marquess of *Dorchester*, &c. Its Inhabitants gain well by *Clothing* and other Merchandize, and its Market on *Saturdays* is very considerable for *Corn*, *Flesh*, *Cattle*, *Sheep*, and Country Commodities, usually sold in great Markets.

Weymouth,

Weymouth, seated on the *Wey* at its influx into the *Sea*, opposite to which, on the other side of the River, standeth *Melcombe*, or *Melcomb-Regis*, but joynted together by a fair *Timber-bridge*; which Towns are now incorporated into one body, and governed by a *Major*, *Aldermen*, and other sub-Officers; yet each of them still send 2 *Burgesses* to *Parliament*. *Weymouth* at present hath but one chief Street, which for a good space lieth open to the *Sea*, and on the bank thereof riseth a Hill of such steepness, that the Inhabitants are forced to climb up to their Chappel by 66 Steps of Stone, from whence there is a fair prospect of the Town and Haven, which lieth under it. *Melcombe*, as seated on a flat, much surpasseth *Weymouth* for conveniency of situation, affording room for Buildings, hath a good Market-place, good Streets and Yards for their Merchandize, which hath invited most of the Merchants to reside there; and these Towns thus united gain well by Traffick into *Newfoundland*, *France*, and elsewhere; and their Markets, which are on *Tuesdays* and *Fridays*, are well provided with all necessaries and provisions.

Not far from *Weymouth* is the Isle of *Portland*, or rather a *Peninsula*, so made by the *Beeds*, which runneth from *Abbotsbury*. It is a place of great strength, as well by nature as art, being encompassed with inaccessible Rocks, except at the place of Landing, where there is a strong Castle called *Portland Castle*; and almost opposite to it on the Land-side towards *Weymouth* is another called *Sandfoot Castle*, which two command all the Ships that pass into the Road. The whole Isle, when got to the top of these craggy Rocks, sheweth it self in a flat, and is in compass about 7 miles. The ground is very good for *Corn*, and indifferent for Pasturage; it affordeth excellent Quarries of *Free-Stone* for building, but is exceeding destitute of *Wood* and other Fuel. On the South-side standeth the only Church in the Isle, which is washed by the *Sea-waves*. And here *Portland-race* sheweth it self.

Lime, or *Lime-Regis*, of great antiquity, seated on the banks of the *Sea*, a well known Haven, *Borough* and *Town Corporate*, governed by a *Major* and other sub-Officers, enjoyeth divers Immunities, and electeth *Parliament men*. The Town is large and built on both sides of the River *Lime*, but joynted together by a Bridge. It enjoyeth a good Trade, and its Markets are well frequented.

Cerne-Abbas, once famous for its rich and fair Abby near adjoining; it is seated in a dry bottom, watered with a fine Rivulet, and in a *Champaign* Country, affording great delight for the *Hawk* and *Hound*. The Town is but mean, yet hath it an eminent Market for *Corn*, *Sheep*, *Cattle*, &c. on *Wednesdays*.

Sherborne, of good antiquity and fame, being formerly the See of a Bishop; it is well seated and watered, and for largeness, fair Buildings, frequency of Inhabitants, and quick Markets, which are on *Thursdays* and *Saturdays*, for *Corn*, *Flesh*, *Sheep*, *Cattle*, and most Country Commodities, gives place to few or none in these parts.

Shaftesbury, or *Shafton*, seated on a great eminency, and very destitute of Water, which for ordinary uses is brought on Horses backs from the foot of the Hill. It once contained (when in its glory) 10 *Parish Churches*, which at present are reduced to 3; and is a fair, large, well built, inhabited and frequented Thoroughfare, *Borough* and *Major Town*, governed by a *Major*, 12 *Aldermen*, &c. electeth *Parliament men*, is honoured with the title of an *Earldom*, and hath a very considerable Market on *Saturdays* for *Corn*, *Flesh*, *Cattle*, and most Commodities.

Blandford, a fair, large and well compacted Town, seated on the *Stower*, over which it hath a Bridge which leadeth to *St. Mary Blandford*. It is well inhabited, enjoyeth a good Trade, and the rather as being neighboured by so many Gentry, and its Market on *Saturdays* is well provided with all things necessary, but chiefly with *Corn*, *Sheep* and *Cattle*.

Pool, enclosed on all parts with the *Sea*, except on the North, where it admits entrance only by one Gate. A Town by reason of its commodious Haven, from a small Village is become a very large *Town Corporate*, governed by

Weymouth.

Portland Isle.

Lime.

Cerne-Abbas.

Sherborne.

Shaftesbury.

Blandford.

Pool.

by a *Major* and other sub-Officers, electeth *Parliament men*, and hath two Markets weekly on *Mondays* and *Thursdays*, which are indifferent well served. In the Haven (contrary to all Ports in *England*) the Sea ebbs and flows four times in 24 hours.

Worham.

Worham, esteemed the ancientest *Borough Town* in the County, seated between the *Frome* and the *Biddle*, at their falling into *Luckford Lake*, where it had a good Harbour for Ships, and was a very considerable large place, containing several Churches, which are now reduced to 3, and its Haven being choaked up, doth much eclipse its Trade. It is a *Town Corporate*, governed by a *Major*, *Esq.* sendeth *Burgesses* to Parliament, and hath an indifferent good Market on *Saturdays*.

Lutworth Castle.

Lutworth Castle, the Seat of *Hum. Weld Esquire*, esteemed one of the best Houses in the County, as well for beauty and largeness, as for a pleasant situation and prospect into the Sea.

Purbeck Isle.

The Isle of *Purbeck*, or rather the *Peninsula*, so called, hath veins of *Marble* running under the Earth. It is about 30 miles in length and 5 in breadth; in which tract are seated divers Towns, amongst which is *Conse-Castle*, seated on a River, and in a barren Soil, between two Hills, upon one of which standeth the Castle. It is an ancient *Borough Town*, governed by a *Major* and *Barons*, enjoyeth ample Immunities, electeth *Parliament men*, and hath a small Market on *Thursdays*.

County of Durham described.

DURHAM, a *Bishoprick* and County Palatine, of a sharp and piercing Air, but through the plentifulness of *Sea-Coal*, the Cold is not so offensive unto the Inhabitants. It is of a different Soil, the Eastern part being *Champaign*, the Southern most fertile and well inhabited, and the Western, hilly, barren, and thin of Woods and Towns, but is recompensed by the store of *Coals*, *Lead*, and *Iron-Mines*.

The ancient Inhabitants known to *Ptolemy* were the *Brigantes*, and in the time of the *Saxons* became part of the Kingdom of the *Northumbers*.

This County was formerly called *St. Cuthbert's Patrimony*, from one *St. Cuthbert*, who was Canon'd a Saint, and was born in this County. It is divided into 4 Wards, *viz.* those of *Chester*, *Darweton*, *Easington*, and *Stockton*, in which are numbered 118 *Parishes*, and is traded unto by six Market Towns.

Durham.

Durham, a City of good Antiquity, dignified with the See of a Bishop, and sends *Burgesses* to Parliament. It is no less pleasantly than commodiously seated on an easie Ascent, and almost encompassed by the River *Weare*; over which it hath two large and spacious *Stone-bridges*, which give entrance into it, which, with its Wall and spacious Castle, make it to be a place of good strength. This City is fair, and neatly compacted, containing 6 *Parish Churches*, besides its Abbey or Cathedral, dedicated to *St. Cuthbert*, a large structure with a lofty Tower in the midst, and two Spires at the West-end, adjoining to which are the Houses for the *Dean* and *Prebends*. It is beautified with fair Buildings, hath well ordered Streets, a spacious Market-place, which is well resorted unto every *Saturday*, is much inhabited and frequented by the Gentry of these parts, enjoyeth a good Trade, and its Shop-keepers are well furnished with Commodities.

Hartley-pool.

Hartley-pool, commodiously seated on the Sea-shoar, (which encompasseth it, except towards the West) and surrounded with Rocks and Hills. It is an ancient *Town Corporate*, governed by a *Major* and sub-Officers, is indifferent large, but poor, and its Market at present disused; and were it not for its Harbour, which is good, it would be less frequented.

Bishops-Aukland.

Bishops-Aukland, well seated on the side of a Hill, and between the River *Weare* and the Rivulet *Gaunleß*; of chief note for its Castle, which is the *Bishops Palace* for the Summer season, now beautifully repaired. Its Market is on *Thursdays*, which is indifferently well provided with Corn and Provisions.

DAR-

Darlington, seated in a flat and on the *Skerne*, which falleth into the *Tees*; a Town of a good largeness, consisting of several Streets, hath a spacious Market-place, and its Market on *Mondays* is very considerable, and well furnished with *Corn*, *Cattle*, and all sorts of Provisions.

Darlington.

At *Ozenhall*, near *Darlington*, are 3 deep Pits, called by the Inhabitants *Hell-Kettles*, which are said to be made by an Earthquake.

Stotton, seated on the *Tees* near its fall into the Sea; a place of great trade for vending and exporting off *Corn* and *Butter* to *London*, and other parts. It is a *Town Corporate*, governed by a *Major* and sub-Officers, is well inhabited, and by reason of its commodious Port it enjoyeth a good Trade.

Stotton.

ESSEX, a County of a large extent, and very populous; is well watered with Rivers, besides the Sea, which sendeth forth several of her branches, as the *Stower*, *Blackwater*, (where those excellent *Oysters*, called *Walfleet*, are caught) *Crouch*, *Ley*, &c. The Soil may be esteemed fertile, though in some places it is sandy and barren; it is well clothed with *Wood*, hath variety of *Parks*, great plenty of *Fish* and *Fowl*; nor is there any want of other Provisions: And for its Commodities affordeth *Cloths*, *Stuffs*, *Hops*, *Butter*, *Cheese*, *Gunpowder*, *Oysters* and *Saffron*.

County of Essex described.

It is severed into *Hundreds*; in which are seated 415 *Parish Churches*, and for the convenience of its Inhabitants hath 21 Market Towns.

Colchester, a place of great antiquity, said to be built by *Collus* the *British* Prince *An. Dom.* 124. and in former times of no less fame than largeness, numbring 15 *Parish Churches*, many of which are now reduced to ruin, with abundance of its Houses. It is no less pleasantly than commodiously seated on the *Colne*, which after about six miles course loseth it self in the Sea. It is governed by 2 *Bailiffs*, 12 *Aldermen*, who are clothed in Scarlet, a *Recorder*, with other sub-Officers; it enjoyeth several Immunities, sendeth *Burgesses* to Parliament, hath a Market on *Saturdays*, which is well served with Provisions, and its Inhabitants (many of which are *Dutch*, and have their Church for divine Worship) drive a good trade for *Sayes*, *Bares*, and other Draperies here made. It is also of some note for the great quantities of excellent *Oysters* here taken. This place gave birth to *Lucius*, *Helena*, and *Constantine* the first Christian King, Empress, and Emperour in the World.

Colchester.

Harwich, a Haven, Sea-port, and *Borough Town*, which electeth *Parliament men*, is of great great strength as well by nature as art. The Town is not large, but is well inhabited and frequented by those that have relation to Sea-Affairs; and the rather, by reason of its safe and commodious Haven, harbour for Ships and Vessels to Anchor in, it being oft-times the Station of the *Navy Royal*, which (and for being the ready passage to *Holland*, where the *Packet-boats* are kept for that purpose) doth occasion it to enjoy a good Trade; yet its Market on *Tuesdays* is not very considerable.

Harwich.

About 4 miles Northwards from *Harwich* is *Horsey Isle*; and about 2 miles further is the *Neß*, a Promontory well known to Sea-men.

Maldon, a Town of great antiquity and repute in the time of the *Romans*, (as *Cambden* noteth) and was the Seat of *Cunobelin*, King of the *Trinobantes*. It is well seated on an Arm of the Sea, about 6 or 7 miles from the Main, before which lie small Isles called *Northey* and *Osey*; the Town is large, having one Street about a mile in length, is well inhabited, enjoyeth a good trade, occasioned by reason of the commodiousness of its Haven; amongst its Immunities electeth *Parliament men*, is governed by 2 *Bailiffs*, 6 *Aldermen*, 18 *Brethren*, a *Recorder*, *High-Steward*, &c. and hath a very considerable Market on *Saturdays* for *Flesh*, *Fish*, *Fowl*, and other Provisions.

Maldon.

Walden, or *Saffron-Walden*, seated on an Ascent amongst pleasant Fields of *Saffron*; a large, fair, well inhabited and frequented *Town Corporate*, enjoying several Immunities, is governed by a *Treasurer*, 2 *Chamberlains*, and the *Commonalty*, and hath a very considerable Market on *Saturdays*, for Corn and all sorts of Provisions.

Walden.

S

Near

Audley-end.

Near unto this Town is that stately Houfe *Audley-end*, built by the Right Honourable *Tho. Howard*, Earl of *Suffolk*, then *Lord High Treasurer* of *England*, which said Houfe now belongeth to his Majesty.

Chelmsford.

Chelmsford, seated in the Road and between two Rivers, over which are Bridges for conveniency of passage. It is a fair, large, and well frequented Town, where the *Affizes* are usually kept, and hath a very great Market for Corn, Provisions, &c. on *Fridays*.

Raleigh.

Raleigh, a place of great antiquity, though not of largeness; and its Market which is on *Saturdays* is but small.

Not far from this Town are the Isles of *Wallop* and *Fowiness*, that is, the Promontory of *Fowls*, which hath a Church in it. Also *Canvey Isle*, of a rich Soil, and feedeth good store of *Sheep*.

Brentwood.

Brentwood, seated on a Hill, and on the high Road; a place of good Antiquity, is well inhabited, and its Market on *Thursdays* is well served with Provisions.

Rumford.

Rumford, a large thoroughfare, well frequented and inhabited Town; seated in the Liberty of *Haeverill*, which enjoyeth large Immunities, being an ancient retiring place of the Kings. This Town of *Rumford* is of note for its great Market on *Tuesdays* for living Cattle; but for Corn and Provisions, which it is plentifully served with, it hath a Market on *Wednesdays*.

Waltham.

Waltham, or *Waltham-Abby*, seated on the River *Lag*, where it formeth several *Eights*, or small Isles, and in a large Forest so called, well stored with *Deer* and other Game. It is a Town of some note, and hath a Market on *Tuesdays*.

Gloucestershire described.

GLOUCESTERSHIRE, a County of a healthful Air and fertile Soil both for Corn and *Pasturage*, yielding plenty of Corn, and feeding abundance of Cattle and great flocks of *Sheep* (especially about *Cotswold*) whose Wool is much esteemed for its fineness.

The part lying Eastwards, called *Cotswold*, riseth up with Hills, and is for grazing; the middle part (which is watered with the *Severne*) lieth low, and maketh a most fertile Blain; and the Western part, beyond the *Severne*, is overspread with Wood and called *Dean Forest*, which affordeth excellent *Timber Trees* for the building of Ships, and great store of *Coal* and *Iron-Mines*, where there are divers *Furnaces* and *Forges* for working the same. This Forest is of a large extent, being about 20 miles in length and 10 in breadth; within which tract of ground are numbred 3 *Hundreds*, 23 *Parish Churches*, 1 *Castle*, 1 *Abby*, 3 *Market Towns*, and 1 *Major Town*; and the Common thereof (besides the *Purlieus* and *Abby-woods*) is said to contain 32000 Acres of Ground.

The chief Commodities that this County produceth, are *Corn*, *Wool*, *Cloth*, *Iron*, *Steel*, *Wood* and *Timber*; also *Fruits* here had in such great plenty, that the Highways and Lanes are beset with *Apple*, *Pear*, and *Plumb-trees*, which grow naturally without ingrafting.

It is well watered with Rivers, amongst which are the *Iss*, *Strowd*, *Churn*, *Avon*, *Wye*, and *Severne*, which for broadness of Channel, swiftness of Stream, and plenty of *Salmon* and other excellent Fish, comes little short of any River in *England*.

The ancient Inhabitants were the *Dobuni*, and in the time of the *Saxons* it became part of the Kingdom of the *Mercians*.

This County is divided into 30 *Hundreds*, in which are numbred 280 *Parish Churches*, and is traded unto by 25 *Market Towns*.

Bristol.

Bristol, seated between the *Avon* and the *Froom*, which after a small course fall into the *Severne*; the *Avon* dividing it into two parts, as the *Thames* doth *London* and *Southwark*, and are so joynd by a fair *Stone-bridge*, on which are also stately Houses. The greatest part of this City is in this County, and the least in *Somersetshire*, but it will owe subjection to neither, being an entire County incorporate of it self, enjoying large Immunities, sendeth *Burgesses* to Parliament, is governed by its peculiar Magistrates, as a *Major*, *Court of Alder-*

Aldermen, 2 *Sheriffs*, and other sub-Officers, and is dignified with the See of a *Bishop* and the title of an *Earldom*, now invested in the person of the Right Honourable *George Digby*, Earl of *Bristol*, &c. It is a City of a sweet and delightful situation, and of far more beauty than antiquity, being adorned with many fair and well built Edifices; and its Streets so neatly ordered, by reason of the *Avon* that runneth through it, together with the common *Sinks* and *Sewers* under ground, that no filth is to be seen to annoy its Inhabitants. It is a City of a large extent, numbring 18 *Parish Churches* besides its *Cathedral*, a fair structure. It is begirt with a Wall, and further defended with Fortifications; its Port is good, and commodious for Ships of a considerable burthen, which doth occasion it to be a place of a very considerable Trade, and to be well inhabited, and frequented by *Merchants* and *Tradesmen*, inasmuch that next after *London* it may justly claim priority of all others in *England*; and for the accommodation of its Inhabitants, besides its *Shambles*, its Markets on *Wednesdays* and *Saturdays* are plentifully served with all sorts of Provisions. It is of note for its *Bristol-Stones*, taken out of *St. Vincents-Rock* near adjoining.

Gloucester, a City of good antiquity, and pleasantly seated on an easie Affent, and on the banks of the *Severne*, over which it hath a fair *Stone-bridge*. 'Tis a City not very large, yet hath it for Divine worship 12 *Parish Churches*, besides its *Abby* or *Cathedral*, dedicated to *St. Peter*, a fair and beautiful building, consisting of a continued *Window-work*, and hath large Cloysters and an excellent Whispering-place. It is also beautified with a handsome *College*, and many neat Buildings, being a place well inhabited and frequented, enjoying a good Trade; and its Markets on *Wednesdays* and *Saturdays* are well furnished with all Provisions, and very great for Corn and Cattle. This City is the See of a *Bishop*, to which belongs a *Dean* and 6 *Prebends*; 'tis a County within it self, enjoyeth large Immunities, sendeth *Burgesses* to Parliament, and is governed by a *Major*, 2 *Sheriffs*, 12 *Aldermen*, a *Recorder*, with other sub-Officers.

Gloucester.

Cirencester, or *Cirencester*, seated on the *Churn*, over which it hath a Bridge, and in the *Wolds* very commodious for Mills. 'Twas a City once large, and of great account in the time of the *Romans*; at present it is a good *Borough Town*, enjoying large Priviledges, and sendeth *Burgesses* to Parliament, and hath weekly two considerable Markets, on *Mondays* chiefly for Corn, and on *Fridays* for *Wool*, *Tarn*, and Provisions.

Cirencester.

Wexbury, commodiously seated on and between 3 Rivers, the *Severne*, *Avon*, and *Switzyat*, over which are as many Bridges; a fair, large, well inhabited and frequented *Borough* and *Town Corporate*, electing *Parliament men*; of good account for making of *Woollen-cloth*, and for the best *Mustard* in *England*, and hath a very good Market on *Saturdays* for Corn, Cattle, and Provisions.

Wexbury.

Stroud, seated on a River so called, over which it hath a Bridge, and on the banks of the said River are placed abundance of *Fulling-Mills*. It is a well built Town, which is of chief note for making and dying of *Cloths*, and especially for good *Scarlets*; and hath a good Market on *Fridays* for Provisions and *Tarn*.

Stroud.

Tedbury, an indifferent good Town, beautified with a fair *Market-house*; and its Market on *Wednesdays* for Corn, Cattle, Cheese, Mault, Tarn, Wool, Provisions, and other Country Commodities, is esteemed one of the best in these parts.

Tedbury.

Barkley, a place of good antiquity, honoured with a *Barony*, and gives title to the Right Honourable Lord *Barkley*, &c. It is seated on a branch of the *Severne*, and hath an indifferent Market on *Tuesdays*.

Barkley.

Dursley, seated on or near a branch of the *Severne*; a good Town, much inhabited by *Clothiers*, and hath a small Market on *Thursdays*.

Dursley.

Chipping-Sodbury, seated in a bottom of the Downs, and in the Road; an indifferent good *Borough Town*, which hath a very great Market for Cheese on *Thursdays*, and is also well served with Corn and Provisions.

Chipping-Sodbury.

Hantsire described.

HANTSHIRE, of a fertile Soil for *Corn*, hath rich *Pastures*, which feed store of *Cattle*; is well clothed with *Wood*, affordeth plenty of *Iron*, which is here wrought from the *Mines*; also excellent *Hony*, and of their *Wool* they make abundance of *Cloths* and *Kerseys*.

Its Southern parts are washed with the *Sea*, and by reason of its several good Ports and Havens it is well resorted and traded unto, affording most *Transmarine Commodities*.

The ancient Inhabitants known to the *Romans*, were the *Segontians* in the North part, and the *Belgae* and the *Regni* in the South.

In this County is *New-Forest*, about 30 miles in compass, and a place which affordeth great variety of Game; within this tract of ground was formerly 36 *Parish Churches*, which with the Houses thereto belonging were pulled down by command of *William the Conquerour*, that it might be a place for *wild Beasts* to harbour in.

It is severed into 40 *Hundreds*, wherein are seated 253 *Parish Churches*, and is traded unto by 18 *Market Towns*, besides those in the *Isle of Wight*; being part of this County, which I shall anon treat of.

Winchester.

Winchester, a City of great antiquity, and famous in the time of the *Romans*, *Saxons*, and *Normans*, it being the Sepulchre of divers of their *Kings* and *Queens*, and was of note in the time of the *Romans* for making the rich *Embroideries* for their *Emperours*. It is a place pleasantly seated in a Valley betwixt Hills, and on the banks of a delightful River, which after about 10 miles course falleth into an Arm of the *Sea*, on which *Southampton* is seated. It is a fair City of about a mile and a half in circuit within its Walls, which gives entrance unto its Suburbs by 4 Gates; for Divine worship it hath five *Parish Churches* besides its *Cathedral*, dedicated to the *Holy Trinity*, a large and beautiful structure. It is garnished with good Buildings, amongst which are the *Bishops Palace*, the *Prebends houses*, and the *Town Hall*, where the *Affizes* and *Sessions* for the County are kept. It is a place well inhabited and frequented, and its Markets, which are on *Wednesdays* and *Saturdays*, are well provided with all sorts of Provisions, especially that on *Saturdays*. It enjoyeth several Immunities, and sendeth *Burgesses* to *Parliament*. Within the City, in the Suburbs, is a fair *Colledge* bearing the name of the City, having a *Warden*, *Masters*, and an *Usher*, and is endowed with a liberal Maintenance.

Near unto this City, pleasantly seated on a fair River, is *St. Crosses Hospital* for the Relief of 12 Poor men called *Brothers*, having a *Master*, *Steward*, and sub-Officers; and according to the Institution of the House, *Bread* and *Drink* is given to all Travellers that will require the same.

Southampton.

Southampton, commodiously seated on an Arm of the *Sea*, capable to receive Ships of a considerable burthen to its *Keys*, which are fair and very convenient for the lading and unlading of Goods, by reason of which it is a place well inhabited by *Merchants* and *Shopkeepers*, who drive a good Trade. It is a large Town, numbring 5 *Parish Churches* besides its *Hospital*, called *Gods-house*. It is garnished with well built Houses, and is fenced about with a double Ditch and Walls, which gives entrance by 7 Gates. It is a Town and County of it self, governed by a *Mayor*, *Bailiffs*, and *Burgesses*, enjoyeth large Immunities, sendeth *Burgesses* to *Parliament*, is dignified with the title of an *Earldom*, and its Markets on *Tuesdays* and *Thursdays* are not very great, except for Provisions.

Portsmouth.

Portsmouth, at present one of the best Garrisons and Sea-port Towns in *England*, by reason of its commodious situation, which makes it to be exceedingly resorted unto by *Shipping*, and is one of the usual Stations for the *Navy Royal*, where his Majesty hath his *Store-houses* and *Docks* for the building and equipping his *Ships*, which adds no small benefit to the Town, which is large, well built, very populous, enjoyeth a good Trade, is well provided with all necessaries, and its Markets on *Thursdays* and *Saturdays* are very considerable for Provisions. This Town is seated in the *Isle of Porsey*, so made by the *Sea* and its two Arms, which are joynd by a River. It is a Town

Town Corporate, sendeth *Burgesses* to *Parliament*; and being a place of such concernment, is exceedingly fortified with two *Castles* and other Fortifications. Here they make *Salt* of the *Salt-water*.

Basingstoke, seated on the Road, a great thorough-fare Town for the Western part. It is a *Town Corporate*, governed by a *Mayor*, 7 *Aldermen*, as many *Burgesses*; a *high Steward*, a *Recorder*, &c. and the Market on *Wednesdays* is very good for *Corn*, especially *Barley*.

Basingstoke.

Silchester, a place of great antiquity, and of a large extent, said to be the ancient City *Kindonum*, built by *Constantius* Son of *Constantine* the Great, and before it was destroyed by the *Danes*, was of a large extent. Here the war-like *Arthur* was Crowned.

Silchester.

The *Isle of WIGHT*, part of *Hantsire*, of which it may seem to be a part; for from *Hurst Castle*, which is seated on a Languet of Land which runneth forth into the *Sea*; it is not above a mile to the Western part of this *Isle*, and from *Portsmouth* not above six. And its Southern part lieth opposite to *France*, from which it is distant about 35 Leagues.

Isle of Wight.

The form of this *Isle* is long, being about 20 miles in length, and where broadest, 2, and hath about 60 miles of *Sea-Coast*.

It is blest with a healthful Air, and is of a fertile Soil both for *Corn* and *Pasture*, and hath plenty of *Conies*, *Hares*, *Partridges*, *Sea-fowl*, and other Game; and for excellent *Fish* may compare with any Country whatsoever, nor is it wanting in any thing either for pleasure or profit, except *Wood*, and that they are supplied with from *Hantsire*.

It is a place of great strength, as well by Nature as Art; for besides its *Castles*, *Black-houses*, *Forts*, and *Militia*; it is fenced about with a ridge of craggy *Rocks* and *Cliffs*, with dangerous *Banks*; amongst which those of most note to Seamen are the *Needles*, *Shingles*, *Brambles*, the *Mixon*, &c. It is very populous, and garnished with 36 *Parish Churches*, and hath for its chief places,

Newport, a large, populous and well frequented *Major Town*, which hath the election of *Parliament men*, is dignified with the title of an *Earldom*, and at present the only *Market Town* in the *Isle*, which is here kept on *Wednesdays* and *Saturdays*, both very considerable for Provisions, *Corn*, *Cattle*, and other Commodities. It is seated within 4 miles of the *Sea*, and on a navigable Creek for small Vessels; to the *Key*, which doth much facilitate its Trade.

Newport.

Tarmouth, a fair *Borough Town*, which electeth *Parliament men*, and had formerly a Market; is beautified with well built Houses, which for the most part are of *Free-Stone* and covered with *Slate*. Its situation is in the Western part of the *Isle* on the *Sea-shore*, with which and its Arms it is now encompassed, and hath 3 strong Fortifications raised with a *Draw-Bridge*, and the West end is defended by a powerful *Castle* on the *Key*.

Tarmouth.

The *Cows*, seated at the entering in of this Creek that goeth to *Newport*; a place very eminent for the harbouring of Ships.

About this *Isle* are several other small ones, or rather *Rocks*, as those called the *Black-Rock*, the *Mixon*, the *Don*, *Moss*, *Challorne*, *Goff*, *Warden*, *Atherfield*, and *Chalk-Rocks*; and on the North part, between it and *Portsmouth*, as dangerous Sands, as the *Brambles*, the *Horse*, and *Nomans Lands*.

HARTFORDSHIRE, blest with a wholsom Air, and for the generality is of an indifferent fertile Soil for Grain, affording good store of *Wheat* and *Barley*, of which they make *Mault*, especially in the Vale of *Ringtail* or *Ringdale*, and hath plenty of *Meadows* and *Pastures*, which feed store of *Cattle*; but of its own nature it is apt to bear *Wood* and *Coppes*. It is well stored with *Parks*, and hath many pleasant and ancient Seats of Gentry, commonly called *Berxes*, that is, *Mannor-Houses*, *Court-Houses* or *Halls*.

Hartfordshire described.

It is well watered with Rivers, the chief amongst which are the *Lea*, *Stower*, *Stratford*, *Redburne*, *Flamsted*, *Colne*, &c.

The

The ancient Inhabitants known to the Romans, were the *Trinobantes* and the *Cattieuchlanians*, and became afterwards part of the East Saxons.

It is severed into 8 *Hundreds*, in which are seated 120 *Parish Churches*, besides 15 *Chappels of Ease*, and is traded unto by 18 *Market Towns*, most of which are of good account.

Hartford.

Hartford, seated on the *Lea*, said to be formerly navigable, once a place of a larger extent, and of more beauty, strength and esteem than now it is; yet is it the Shire Town, where the County Goal is kept, and as a *Borough Town* electeth *Parliament men*. It is governed by a *Major*, 9 *Burgesses*, 16 *Affluants*, a *high Steward*, who is always a Noble-man, a *Steward* of the Court of *Records* and other sub-Officers, and hath a Market on *Saturdays*, which is well frequented and served with Commodities.

St. Albans.

St. Albans, seated on the *Colne*, a Town of great antiquity, being raised from the ruins of that famous City *Verulam*, so splendid in the time of the Romans, as may appear by the *Pillars*, *Pavements*, *Arched-Vaults*, *Idols*, and *Coins* oft digged up; at which time it enjoyed ample Privileges and Immunities, many of which it yet keepeth, being dignified with the Title of an *Earldom*, and as a *Borough Town* electeth *Parliament men*. For its chief Magistrates hath a *Major*, 10 *Aldermen*, a *Steward* and *Chamberlain*. It is a fair, large, well inhabited and frequented thorough-fare Town; divided into four Wards; for Divine worship hath 3 *Parish Churches*, in one of which was (if not is) a *Font* of solid Brass brought out of *Scotland*, which was there made use of for the baptizing the *Scottish Kings Children*, and hath a Market on *Saturdays*, which is well served with Commodities, &c.

Barnet.

Barnet, or *high Barnet*, a large, dry and pleasant Town, highly seated, and on the Road, a place of some account for its *Medicinal-waters*, as also for its Swine-Market on *Mondays*, which makes it to be well frequented, and to be well accommodated with Inns. Here was fought a bloody Battle between the Competitors of the Houses of *York* and *Lancaster* on *Easter-day*, in which *Edward* the Fourth became Victor.

Watford.

Watford, seated on the *Colne*; a large and well inhabited Town, whose Market on *Tuesdays* is well frequented, affording all necessities, especially Corn in great plenty.

Not far from *Watford* is *Langley Abby*, where was born *Nicholas*, Surnamed *Break-Spear*, who was afterwards Bishop of *Rome*, and called Pope *Hadrian* the 4th. He taught the *Norwegians* the Christian Faith: he was of so proud a Spirit, that he had his Stirrup held by *Frederick* the Roman Emperor.

Berkhamsted.

Berkhamsted hath a fair *Free School*, and a pretty good Market on *Mondays*, chiefly for *Mault*. And here it was that the *English Nobles* met in Council for the shaking off the *Normans Yoke*.

Hatfield.

Hatfield, a place of great delight and recreation, by reason of its *Parks* and other places of pleasure, once dignified with a *Royal-house* of the Kings, which now belongeth to the Earl of *Salisbury*; it hath a Market on *Thursdays*.

Ware.

Ware, a large, well frequented and inhabited thorough-fare Town, seated on the *Lea*, hath a Market on *Tuesdays*, which is well provided with Commodities; a place well known to many for its great *Bed*.

Stratford.

Stratford, or *Bishops-Stratford*, seated on the side of a Hill; a very large, fair, and well inhabited and frequented Market Town, full of Inns for the giving entertainment to Strangers, and its Market on *Thursdays* is very well resorted unto, and provided with Provisions and most Country Commodities. Here are the ruins of a *Castle*, raised on an artificial Mount, within which is a deep and dark Dungeon called the *Convicts Prison*, by which it may be supposed that some great Privileges did belong unto it.

Baldock.

Baldock, a considerable large Town, seated between the Hills in a *Chalky* Soil fit for Corn, of chief note for its many *Maulsters*; yet its Market on *Thursdays* is but small.

Roxford.

Roxford, a famous *Market Town*, which is kept on *Wednesdays* for Corn and *Mault* here made, being seated in a fat Soil, and between Hills in a bottom. The Town is large, well inhabited and full of *Inns*, part being in this County and part in *Cambridgeshire*.

Roxford.

HEREFORDSHIRE, a County every where exceeding fertile, having great plenty of Grains and rich Pastures, which feed store of Cattle, especially *Sheep*, whose *Wool* is much esteemed for its fineness; and for *Wheat*, *Wool* and *Water* it yieldeth to no County in *England*. It is well clothed with *Wood*, and watered with *Rivers*, the chief amongst which are the *Wye*, *Mynew*, *Wades*, *Doive*, *Lugg*, *Dirham*, &c.

Herefordshire described.

All *Fruits* here grow in great plenty, and of their *Apples* they make such abundance of *Siden*, that besides what they use themselves (it being their general drink) of late years it is become a considerable Commodity, especially that which is called *Red-streak*.

Its ancient Inhabitants were the *Silures*, a stout and warlike People, who sorely perplexed the Romans for 9 years space, through the valour and noble exploits of their Commander *Ghorastacus*, and became afterwards part of the Kingdom of the *Mercians*.

It is divided into 11 *Hundreds*, in which are numbred 176 *Parish Churches*, and hath Traffick with 8 *Market Towns*.

Hereford.

Hereford, a City of great antiquity, and raised out of the ancient *Arconium*, now called *Kenscheffer*, about 3 miles distant; a place of good account in the time of the Romans, and so continued until it was shaken to pieces by a violent *Earthquake*. It is no less pleasantly than commodiously seated amongst delightful *Meadows* and rich *Corn-fields*, and almost encompassed with *Rivers*, to wit the *Wye* and two others, over which are two Bridges. It is of a large place, beautified with good Buildings both publick and private, amongst which are the *Bishops Palace*, the *Colledge*, the *Cathedral*, the *Prebends houses*, and *Hospital*, and numbred 6 *Parish Churches*, (two of which in the late Troubles were demolished) besides its *Cathedral*, to which belongeth a *Bishop*, *Dean*, *Chancellor*, 6 *Canons*, 27 *Prebends*, with a *Chanter*, *Treasurer*, 12 *Vicars Choral*, besides *Deacons*, *Queristers*, and other Attendants. This City enjoyeth large Immunities, sendeth *Burgesses* to Parliament, is governed by a *Major*, 6 *Aldermen*, a *Common Council*, *Recorder*, and other sub-Officers, and is very well served with Commodities, having weekly 3 Markets on *Wednesdays*, *Fridays* and *Saturdays*, which are of considerable account; that on *Fridays* for *Cattle*, *Sheep*, and *Hogs*, and the other for *Grain* and all sorts of *Provisions*, besides *Gloves* here made and sold in great quantities.

Near to this City is *Gilden Vale*, so called from the fertility of the Soil and pleasant situation.

Ross, seated in a fertile Soil on the banks of the *Wye*; a fair *Borough Town*, which hath a very great Market on *Thursdays* for Corn, *Cattle*, and *Provisions*, being much resorted unto by the Inhabitants of *Gloucestershire* and *Monmouthshire*.

Ross.

Lidbury, near adjoining to *Malvern Hills*; a fine well built Town, seated in a rich Clayey-ground, much inhabited by *Clothiers*, who drive a good Trade, and its Market on *Tuesdays* is well served with, *Corn*, *Cattle*, and *Provisions*.

Lidbury.

Lemster, a large, ancient and pleasant Town, seated in a rich Soil and on the *Lugg*, which runneth through it, over which are several Bridges. It is governed by a *Bayliff*, a *Recorder*, *Justices* of the Peace, and 24 of the *Chamber* or *Common Council*; it sendeth *Burgesses* to Parliament, and hath a very good Market on *Fridays* for Corn, *Cattle*, *Sheep*, *Provisions*, *Hops* and *Wool*, for which this Town is of note, it being called *Lemster-Ore*.

Lemster.

Kyneton, also seated on the *Arrows*; a pretty large and well built Town, whose Inhabitants drive a good Trade for narrow Cloths. Its Market on *Wednesdays* for Corn, *Cattle*, *Provisions*, and several Country Commodities, is esteemed the best in the County.

Kyneton.

HUN.

County of
Huntington
described.

HUNTINGTONSHIRE, a County for the generality of a fertile Soil both for Corn and Tillage, garnished with delightful Hills, and towards the East; where it joyneth on the *Fens*; it hath rich Pasturage, which feed store of Cattle. It is well watered with *Rivers*, the chief amongst which is the *Ouse*, which divideth it self into several streams.

It is severed into 4 *Hundreds*, in which are seated 79 *Parish Churches*, and is traded unto by 5 *Market Towns*.

Huntington.

Huntington, pleasantly seated on a rising Ascent; and on the North-banks of the *Ouse*, over which it hath a fair *Stone-bridge*, which leadeth to *Gothmanchester* on the other side of the *Ouse*; a very large County and ancient *Borough Town*, seated in a rich Soil, and well inhabited by *Women* and *Farmers*. It is a Town of great antiquity, was once very populous, numbering no less than 15 *Parish Churches*, which are now reduced to 4, and enjoyed great Immunities, and had a Mint for Coynage. At present it is dignified with the title of an *Earldom*, sendeth *Burgesses* to Parliament, is governed by a *Major*, 12 *Aldermen* (of which the *Major* is one) and *Burgesses*; is well inhabited and frequented, and the rather as being a thorough-fare Town from *London*, *Cambridge*, and other Southern parts of *England*, into the North and into *Scotland*; and also for being the place where the *Affises* are kept for the County; and its Market on *Saturdays* is very well served with *Provisions*.

St. Ives.

St. Ives, so called from one *Ivo* a *Persian Bishop*, who 'tis said about the year 600 travelled through *England* preaching the Gospel, and here ended his days, and his Body was from hence removed to *Ramsay Abbey*; a fair, large and ancient Town, seated on the *Ouse*, over which it hath a very good *Stone-bridge*, hath a Market on *Mondays*, which is well served with *Provisions*, and is of chief note for living Cattel.

St. Neots.

St. Neots, (so called from *Neotus*, a Monk of *Glastenbury*) a large and well built Town, beautified with a neat Church, is commodiously seated on the *Ouse*, over which it hath a fair *Stone-bridge*, which leadeth to *Bedfordshire*. Its Market is on *Thursdays*, which is well served with *Provisions*, and through the commodiousness of the *Ouse* the Neighbouring Towns are from hence furnished with *Coals*.

Ramsay.

Ramsay, seated in the *Fenny* part amongst rich grounds both for Tillage and Pasturage, and near the Meers of *Ramsay* and *Whitsey*, which with the *Rivers* that plentifully water it, afford excellent *Fish* and *wild Fowl* in great plenty. It is a good Country Town, which was held in great esteem for its rich *Abby* so called, and its Market on *Wednesdays* is well frequented.

County of
Kent described.

KENT, a County of a large extent, and although very hilly, for the generality is of a rich and fertile Soil both for Corn and Pasture, and is well stored with *Cattle*, *Fish*, *Fowl*, and *Fruits*.

The Air is temperate and good, except in the *Weald* and *Marshes*, which are Aquish. It is well watered with *Rivers*, many of which are Navigable; as the *Thames*, which washes its Northern parts; the *Medway*, which in a manner divideth the Shire in the midst, and is the station for his Majesties *Navy Royal* (which said River loseth it self under ground, and riseth again near *Coxheath*) besides 10 others of considerable account, which opening with several Creeks and Havens, are found commodious for *Ships* to ride in, of which four bear the name of *Cinque Ports*, viz. *Dover*, *Sandwich*, *Ramsey*, and *Hith*; and on the banks of these *Rivers*, which are crossed by divers *Bridges*, are seated several good Towns.

This County boasteth it self for being the first Kingdom of the *Heptarchy*; of having a particular King to it self; that it was never subdued, but yielded upon Articles to the *Normans*, and to keep their ancient Customs; That their *Kings* and *Commons*, amongst all the *Saxons*, were the first Christians.

This

This County is enriched with two Cities and *Episcopal Sees*, is strengthened with several *Castles*, is graced with 4 of the *Kings Palaces*, beautified with many splendid Buildings; well replenished with Gentry, sufficiently stored with safe Roads and secure Harbours for *Ships*; plentifully garnished with good Towns, is a place of a considerable Trade, affording Corn and other Grains, *Cloth* and several *Draperies*, *Fullers-Earths*, *Madder*, *Flax*, *Iron*, *Wood*, *Fruits*, both *Apples* and *Cherries*, in great plenty; and by reason of its vicinity to *France* is well known and frequented by Strangers.

As to its division, it hath 24 *Bailiwicks*, 17 *Franchises* and *Districts*, which have Courts of Record to hold pleas of all Actions real, personal, and mixt, and 14 *Corporations*; for the names of all which see the Volume of *Britannia*, pag. 122, lately published by me.

It is severed into 5 *Laths* and 64 *Hundreds*, in which said *Hundreds* are numbered 400 and odd *Parishes*, and hath intercourse of Traffick with 28 *Market Towns*.

The *Lath* of *Sutton*, or *SCOTTON* *Nat Hone*, is severed into 8 *Hundreds*, hath two divisions of *Justices* of the *Peace*, and for its chief places

Lath of Sutton
with its chief
places.

Sevenoke, a Town of good resort, so called from its Founder *Will. Sevenoke*, Lord Major of *London*, Anno 1418. who erected a *Free School* and a *Hospital*; hath a Market on *Saturdays*, which is well served with Corn and *Provisions*.

Sevenoke.

Dartford, seated on the *Darent*, not far from its influx into the *Thames*, and on the high Road from *London* to *Canterbury*; 'tis a good large Town, full of *Inns* and Houses of Entertainment; and hath a Market on *Saturdays*, which is well stored with Corn and *Provisions*, and is much frequented by *Corn-Chandlers* and *Meat-vendors*.

Dartford.

Greenwich, a large, well built and very pleasant Town, seated on the Bank of the *Thames*, being much inhabited and frequented by Gentry, and enobled with a once stately *Palace* of the *Kings*, out of the Ruins of which is now erecting a curious Pile of Buildings; and adjoining to this *Palace* is a small, but pleasant *Park*, which affords a delectable prospect. And here it was that *Queen Elizabeth*, with divers other Princes, were born.

Greenwich.

Adjoining to *Greenwich* is *Blackheath*, a place of note in former times for Military Affairs; and it is supposed, that here might be dug excellent *Sed Coals*, but is not encouraged for fear of hindring the *Newcastle-Trade*.

Eltham, seated on the South-side of *Shooters-Hill* amongst Woods; a well built Town, neatly situated, well inhabited by Gentry, and was once honoured with a *Palace* of his Majesty, said to be built by *Anthony Beck*, *Patriarch* of *Jerusalem*, who gave it to *Queen Elianor*, wife to *King Edward* the First.

Eltham.

The *Lath* of *AYLESFORD* is of a large extent, reaching from North to South, is severed into 15 *Hundreds*, is divided into 3 divisions of the *Justices* of the *Peace*, and hath for its chief places

Aylesford Lath
described.

Rocheſter, an ancient City, and once larger than now it is, being at present but small, having but one principal Street, which is of a good length, and for the most part inhabited by *Tradesmen* and *Inn-keepers*, and graced with well built Houses; besides its *Cathedral*, built by *Bisshelbert King of Kent*, dedicated to *St. Andrew*, a fair structure, to which belongeth a *Deanery* and 6 *Prebendaries*. It is a City no less pleasantly than commodiously seated on the banks of the *Medway*, over which it hath a stately *Stone-bridge*, sustained by divers Arches, which leadeth unto *Stroud*, a good, fair and well inhabited thorough-fare Town from *London* to *Canterbury*, (as is *Rocheſter*). This City enjoyeth several Immunities, is dignified with the Title of an *Earldom*, governed by a *Major*, Court of *Aldermen*, with other sub-Officers; hath the election of *Parliament men*; is well resorted unto; and its Market on *Friday* is well served with *Provisions*.

Rocheſter.

T

Adjoining

Adjoyning to this City is *Chetham*, also seated on the banks of the *Medway*; a long thorough-fare Town, which is chiefly inhabited by *Sea-men*, and those that have alliance thereunto, and the more as being the station of the *Navy-Royal*, and where there is a stately *Dock* for the building and equipping of his *Majesties Ships*.

Gravesend.

Gravesend, seated on the banks of the *Thames*; a place of great resort, as being the common Landing-place for Strangers and Sea-men in their passages to *London*; as likewise the accustomed place for the taking of *Shipping*, and the ready Road to *France*, which doth occasion it to be well furnished with *Inns*, *Taverns*, and Houses of entertainment, and its Market on *Wednesdays* and *Saturdays* to be well provided with *Victuals*; yet all things here want for no price. And here is seated one of the *Block-houses*, the other being opposite unto it in the County of *Essex*; which said *Block-houses* are for the securing the passage of the *Thames* up to *London*.

Maidstone.

Maidstone, seated on the *Medway*, (over which it hath a fair Bridge) which, with the branch it sendeth forth, severeth the Town. It is a large, fair, sweet, populous, and well built and frequented *Borough Town*, which electeth *Parliament men*, enjoyeth several Privileges, and as the *Shire-Town* here is one of the Prisons for the County, and where they keep their *Sessions* and *Assizes*. Its Market is on *Thursdays*, which is very considerable and well provided with Corn and all sorts of Provisions.

Tunbridge.

Tunbridge, seated on a branch of the *Medway*, over which it hath a Bridge, and is said to take its name from its many Bridges. It is a well frequented Market Town, which is on *Fridays* for Corn and Provisions; and is of chief note for its healthful and Medicinal Waters near adjoyning, which are much visited by the Gentry in the Summer season.

Lath of Scray described.

The Lath of *Scray* taketh up the mid-part of the County; is divided into 16 *Hundreds*, hath two divisions of *Justices of the Peace*, and hath for its chief places,

Faversham.

Faversham, not far from the Isle of *Shippes*, so made by the *Medway*, which with the *Sea* encircleth it; out of which said River there cometh a Creek up to the Town, by reason of which it is well frequented by *Hoyes* and such like small Vessels, which here drive a good Trade; it being the principal Port-Town for all this part of *Kent*. The Town is large, well built, and inhabited by *Tradesmen*, *Inn-keepers* and *Victualers*; and its Markets on *Wednesdays* and *Saturdays* are well served with Provisions.

Near this Town are very deep Pits; which are narrow at the mouth and broad below, with *Chalk Pillars* as it were to support them, and have partitions or rooms within them.

Queenborough.

Queenborough, seated in the Isle of *Shippes* (which is about 21 miles in circuit, and of an exceeding fertile Soil, feeding great flocks of *Sheep*, from whence 'tis said to take its name;) a *Borough Town* of great antiquity; but is very small and mean. For the defence of the passage up the River of *Thames* here was a very strong Castle, now reduced to ruin; but of late his present Majesty hath caused a powerful Fort to be raised at *Sbyreness*, the better to secure the passage up the *Medway* to *Gellingham* and *Chetham*, where the *Navy Royal* rideth. In the Isle of *Shippes* there are no *Moles*, and if any be carried thither, they are said to die.

Ashford.

Ashford, not far from the *Stower*, hath a well frequented Market on *Saturdays*; and in this Town is kept a Court of *Record* upon every *Tuesday* three weeks for *Actions*, wherein the debt or damages do not exceed 20 Marks.

Lath of Shep-wey.

The Lath of *SHEPWEY* is severed into 13 *Hundreds*, hath one division of *Justices of the Peace*, and for its chief places hath,

Hyth.

Hyth, once a place of good note and largeness, as being one of the *Cinque-Ports*, but now not much frequented, by reason of the *Seas* forsaking it, and its Haven being choaked up; yet doth it still retain its privileges as other *Cinque-port Towns*, and hath a Market on *Saturdays*, which is indifferently well furnished with Provisions; and here are yet two *Hospitals*, which are both under the government of the *Major* and *Jurats* of the Town.

Rumney.

Rumney, another of the *Cinque-Port Towns*, seated in a Marsh so called, of about 14 miles in length and 8 in breadth; now more famous for the fertility of the Marsh in grazing of Cattle than for the goodness of the place, by reason of the *Seas* leaving it; and for its unwholesome Air, the Town being not large nor the Buildings good, yet is it the chiefest Market Town in the Marsh, which every *Thursday* is indifferently well served with Provisions; yet doth it still enjoy the privileges of other *Cinque-port Towns*.

Lath of St Augustine.

The Lath of *St. AUGUSTINE* is washed on the North and East with the *Sea*; it is severed into 12 *Hundreds*, hath one division of *Justices of the Peace*, and for its chief places hath,

Canterbury.

Canterbury, a City of great antiquity, being said to be built 900 years before the birth of Christ, and in former time was held in great fame and much resorted unto, and the more for being the Burial-place of *St. Thomas Becket* there slain, a person so greatly revered by the *Romanists*. This City is encompassed with a *Mote and Wall*, on which are (or were) several *Citadels* or *Watch-Towers*, without which are its Suburbs, in which and within the City are numbered 14 *Parish Churches* besides its *Cathedral*; a large and superb structure, not inferior to *St. Pauls* at *London*, when in its pristine grandeur and splendour, having two lofty Towers, which much add to the prospect of the City, and within its bounds or limits are several fair Edifices belonging to the *Dean* and *Prebends*, as also a Free School called the *Kings School*. It is a City graced with divers good Buildings and a fair Market-house, over which are Rooms made use of by the *Major* and *Aldermen* for the publick concerns of the City. It is dignified with an *Episcopal See*, who is Primate of all *England*; is governed by a *Major* and Court of *Aldermen*, and hath a *Recorder* and other sub-Officers. It enjoyeth several Immunities, electeth *Parliament men*, is well inhabited and traded unto for its *Stuffs* made by *Walloons* there inhabiting, and is well provided with Provisions; for besides its Shambles it hath weekly two Markets on *Wednesdays* and *Saturdays*, which is the most considerable.

Dover.

Dover, commodiously seated on the Sea-shoar, which together with its strength, as well by Nature as Art (being loftily situated between high Cliffs, commanding both Sea and Country adjacent, and defended by a strong Castle and other Fortifications;) as also the commodiousness of its Haven, for being one of the *Cinque-port Towns*; and for its short and ready passage into *France* (being about 21 miles) makes it a place of considerable note. It also enjoyeth a good Trade, and its Markets on *Wednesdays* and *Saturdays* are well frequented and furnished with Provisions. It is a *Town Corporate*, governed by a *Major* and other Officers, enjoyeth ample Immunities, and was of a larger extent than now it is, having formerly 7 *Parish Churches*, which are reduced to 2. Its Castle (built by *Julius Caesar*) is esteemed a place of great importance to the Nation, and is strongly guarded. At the west part of the *Peer* is a Fort called *Archbiff-Fort*; and in the Cliff under the Castle is a Fort called *Motes Bulwark*; and at the other side of the Castle-hill is a Tower or *Light-house*, made use of for direction of Ships, called *Breden-stone*, and by some, the *Devils drop of Mortar*.

Along the Shoar, going towards *Sandwich*, are *St. Margarets-bay*, *Kings-down*, *Walmer Castle*, *Deal Castle*, and *Sandown Castle*.

Sandwich.

Sandwich, another of the *Cinque-port Towns*, being incorporated, and amongst its Immunities electeth *Burgesses*. It is a place of good strength both by Nature and Art, but by reason of the ill-commodiousness of the Harbour is not well frequented; yet hath it weekly 2 Markets on *Wednesdays* and *Saturdays*.

Isle of Thanet.

The Isle of *THANET* doth here present it self, which is about 9 miles long, and about the same breadth where broadest. It is very populous and plentifully stored with Provisions, especially Corn, and hath in it several Towns, whose names appear in the Map.

County of
Lancaster de-
scribed.

The County Palatine of **LANCASTER**, for the generality of an un-fertile Soil as to the *Moorish* part; yet not without a sufficiency of *Corn, Cattle, Fish, Fowl, Coals, Flax, &c.* The Eastern part is very Mountainous, and full of stony, barren and craggy Hills, being the habitation of *Foxes, Conies*, and some *Otters*; but where the ground is plain and Champain it is very grateful to the Husbandman, except some moist and unwholesome places, which they call *Mosses*, which are not unlike *Irish-bogs*, from which the Inhabitants are supplied with *Turf* for Fuel; and throughout the County there is great store of goodly Cattle, which are there sold at easie rates.

The Air of this County is sharp and serene, but very healthful to the Inhabitants.

It is very well watered with Rivers, amongst which are the *Mersey, Irwel, Roch, Irke, Dugless, Tarrow, Ribel, Derwent, Codar, Lune, Brochwye, Keere, Kent, Dudden, &c.* with the *Sea*, which watereth its Western parts, together with the *Meers*; it aboundeth in *Fish and Fowl*.

The ancient Inhabitants were the *Brigantes*; and when the *Saxons* became Masters of the Isle, it was part of the Kingdom of the *Northumbers*.

Although there are but 61 *Parishes* in the County, yet it is very populous, the *Parishes* being large, containing within them several *Chappels of Ease*, which may be reckoned as *Parishes* in other Counties. And amongst these *Parishes* there are 27 *Market Towns*, many of which are large, well frequented and traded unto.

Lancaster.

Lancaster, a place of good antiquity, pleasantly seated on the River *Lune*, over which it hath a fair *Stone-bridge* sustained by 5 Arches. It is at present indifferent large, containing (though but one *Parish Church*, which is large and fair,) yet several well ordered Streets, and graced with good Buildings; the chief amongst which are its *Church, Bridge, Market-house or Town-hall*, where the *Major* and his *Brethren* keep their Courts, and *Castle*, seated on the top of the Hill, now made use of as a Prison for the County, and where the *Affizes* are kept: And although the *Shire Town*, yet it is not much frequented nor inhabited by Tradesmen, but chiefly by Husbandmen, as lying in a good Soil; but its Market, which is on *Saturdays*, is well served with *Corn, Cattle*, and *Provisions*, especially *Fish*, and chiefly with *Salmon*. It is a *Town Corporate*, governed by a *Major, 2 Bailiffs, 6 Brethren, 24 Burgesses, 2 Chamberlains, a Recorder, &c.* and amongst its Immunities electeth *Parliament men*.

Manchester.

Manchester, seated betwixt the *Irke* and *Irwel*, and upon a stony Hill; a Town of great antiquity, being the Fort and Station of the *Romans*, and at present is large, beautified with fair Buildings, (the chief amongst which are its *Colledge, Market-place*, and *Collegiate-Church*, which is very ornamental) is well inhabited, much resorted unto, and enjoyeth a considerable trade for most Commodities, but chiefly for its *Linnen and Woollen-Cloths*; also for its *Cottons*, known by the name of *Manchester Cottons*, which are held in great esteem; and its Market on *Saturdays* is very considerable for the above-said Commodities, as also for *Provisions*.

Warrington.

Opposite to **Manchester**, on the other side of the River, is **Salford**, a pretty large Town, with a *Chappel of Ease*.

Warrington, seated on the *Mersey*, over which it hath a curious *Stone-bridge*, which leadeth to *Cheshire*. It is a fine large Town, much resorted unto by *Welshmen*; is of note for its *Lampries*, and hath a considerable Market for *Linnen-Cloth, Corn, Cattle, Fish* and *Provisions*, on *Wednesdays*.

Liverpool.

Liverpool, or **Leverpool**, commodiously seated on the East-side of the goodly River *Mercy*, where it affords a bold and safe harbour for *Ships*, which hath much advanced its Trade, being inhabited by divers wealthy Merchants and Tradesmen, whose Traffick (especially into the *West Indies*) makes it famous; its situation affording in greater plenty and at reasonabler rates than most parts of *England*, such exported Commodities proper for the *West Indies*, as likewise a quicker return for such imported Commodities, by reason of the *Sugar-Bakers* and great Manufactures of *Cotton* in the adjacent parts; this Town

Town having intercourse of Traffick with *Ireland*, and divers considerable Counties in *England*. The chief Commodities that this Town affordeth, are *Corn, Butter, Cheese, Beef, Pit-Coal, White Salt* from *Cheshire*, *Silver* and *Gold-Watches, Lead, Saddles, Shoes, Bees-Wax*, all sorts of *Nails* and *Iron Tools*; and for *Flesh, Fish, Fowl*, and all sorts of *Provisions*, its Market on *Saturdays* is sufficiently well provided with. It is an ancient *Borough* and Corporation, sending two Representatives to Parliament; 'tis governed by a *Major, Bailiffs, Aldermen, Recorder, Town-Clerk*, and *Common-Council*, consisting of 40 *Burgesses*. It is of late, at the great charge and industry of the Family of the *Ducors of Bank-hall*, beautified with many goodly Buildings, to the great enlargement of the Town, there being Streets that entirely bear their name.

Wigan, seated on the *Doughlass*; a large and well built *Town Corporate*, is governed by a *Major, Bailiffs, and Burgesses*; hath the election of *Parliament men*, on every 14 good Trade, hath two Markets weekly on *Mondays* and *Fridays* for *Meal* and *Provisions*, is much inhabited by *Brassiers, Pewterers, Dyers, Weavers of Rugs, Coverlids, and Ticking for Bedding*, and is of note for its Fuel called *Cannik*; being the choicest Coal in *England*.

Rieslow, a large, fair, well built and inhabited, and frequented *Borough Town*, where the Court of *Chancery* and Offices of *Justice* for the County are held: It hath the election of *Parliament men*, and is governed by a *Major, Bailiffs, Burgesses, Recorder*, and other sub-Officers. It is seated on the *Rible*, over which it hath a fair *Stone-bridge*, and for the accommodation of its Inhabitants hath weekly 3 Markets, viz. on *Wednesdays, Fridays*, and *Saturdays*, which is the chief, and very considerable for *Corn, living Cattle, Provisions*, and several other Commodities in great plenty.

Cartmel, seated near the *Sea*, and amongst the Hills called *Cartmel-Fells*. It is beautified with a very fair Church built *Cathedral-wise* in form of a Cross, and hath a very good Market on *Mondays* for *Corn, Sheep* and *Fish*.

Dalton, seated in a Champain Country in the lower *Farnes*. Here is an ancient *Castle*, now belonging to his Grace *Christopher Duke of Albemarle*, wherein is kept the *Records* and *Prisoners* for Debt for the Liberty of *Farnes*. It hath a Market on *Saturdays*, which is very well served with *Corn, Cattle, Fish* and *Fowl*.

LEICESTERSHIRE, a Champain Country, and but thinly clothed with *Wood*, which defect is supplied by the great plenty of *Pit-Coal*, digged up in the Northern parts, which is called the *Woud*, and although barren breedeth store of *Cattle*. Its South-west and North-east parts are of a good Soil for Tillage and Pasturage; and its South-east part is exceeding fertile, having rich Pastures, and produceth all sorts of Grain, especially *Pease* and *Beans*.

It is well watered with Rivers, as the *Stour* or *Sour, Trent, Wreke, Weeland, Sence, Eye, &c.*

It is severed into 6 Hundreds; for Divine worship hath about 120 *Parish Churches*, and is traded unto by 12 *Market Towns*.

Leicester, delightfully seated in a healthful Air, rich Soil, and on the Banks of the *Stour*, over which it hath two Bridges. It is a place of more antiquity than beauty, being said to be built by King *Leir*, and called *Caer-Lerion*, wherein Authors say he placed a *Higb-Priest* to serve in the Temple of *Janus*, which he caused to be built; and wherein he was buried. This Town was also had in great request in the time of the *Romans*; also *Ethelred*, King of the *Mercians*, erected here an *Episcopal See*, which he soon translated elsewhere to its great impoverishment; but the noble Lady *Edelfied* not only repaired it, but also encompassed it with a strong Wall, and much added to its Riches, so that it soon became a place of a great Trade; which glory and riches it lost by the Spoils it sustained by *Rob. Bossu*, the Crouch-back Earl of this Shire. As to its present state, it is a *Borough* and *Town Corporate*, governed by a *Major, Aldermen*, and sub-Officers, is dignified with the title of an *Earldom*.

Leicester.

County of
Leicester de-
scribed.

is well inhabited, hath indifferent good Buildings, sendeth two Representatives to Parliament; containeth 3 *Parish Churches*, and its Market on *Saturdays* is well served with Corn, Provisions, and Country commodities.

From this Town *Crouch-back Richard* set forth with great strength and pomp to *Redmore*, near *Bosworth*, where, on the 22. of *August* 1485, in a bloody Battle there fought (for the deciding the differences betwixt the Houses of *Tork* and *Lancaster*) he was slain, yielding both himself and the victory to *Henry* of *Richmond*, who was proclaimed King in the field; and the next day the body of the said *Richard* was disgracefully brought back torn, and naked, and as meanly buried in the *Gray-Friars* of *Leicester* in a Stone-chest, which now is made use of in an *Inn* for a Drinking-trough for *Horses*.

Loughborough.

Loughborough, delightfully seated on the banks of the *Sour*, over which it hath a Bridge, amongst fertile Meadows and near *Charwood Forrest*; It is a handsom Town, beautified with fair Buildings and a large Church; and hath a very considerable Market for *Corn, Cattle, Sheep, and Provisions*, on *Thursdays*.

Melton-Mowbray.

Melton-Mowbray, well seated in a fertile Soil and on the banks of the *Eye*, which almost encircleth it, over which are two fair Stone-bridges. It is an indifferent large and well built Town, and hath a very considerable Market on *Tuesdays* for *Corn, Cattle, Hogs, Sheep, Provisions, &c.*

Lutterworth.

Lutterworth, seated on the *Swift*, and in a good Soil; an indifferent Country Town; beautified with a large and fair Church, which hath a lofty spired Steeple; and its Market on *Thursdays* is well served with *Corn* and Country commodities. Near this Town is a Spring so cold, that in a short time it turns *Straws* and small *Sticks* into *Stone*.

County of Lincoln described.

LINCOLNSHIRE, a County of a large extent, and doth divide its form, bounds and division into *Hundreds*.

The Soil is of a different temperature; the Western and Northern parts being very pleasant and grateful to the Husbandman both for *Corn* and rich *Pastures*, which feed great store of *Cattle*; and the Eastern and Southern parts are fenny, barren, and unfit for *Corn*; but in recompence hath great plenty of *Fish* and *Fowl*. The Air upon the South and East parts is thick and foggy, occasioned through the Fenny grounds; but the other parts good and healthful. It is well watered with Rivers, as the *Humber, Trent, Idell, Dane, Wash, Witham, Welland, &c.* which lose themselves in the Sea.

The chief Commodities that this County produceth, are *Corn, Cattle, Fish, Fowl, Flax, Wool, Alabaster, &c.*

This County is severed into 3 principal Divisions or Parts, *viz. Lindsey, Holland, and Kesteven*, which are divided into 30 *Hundreds*, in which are numbred 631 *Parish Churches*, and is traded unto by 31 *Market Towns*.

Lincoln.

Lincoln, a City of great antiquity, and hath been far more magnificent and spacious than now it is, whose ruinous places doth witness the same, being said to have had 50 *Churches*, which now are reduced to 15, besides its *Cathedral* or *Minster*, said to be one of the finest, loftiest, and stateliest structures in *England*. This City in the time of the *Britains* was of great strength and fame, containing 1070 *Mansions*, and 900 *Burgesses*, with 12 *Lage-men*, having *Sac* and *Soc*; and in the time of the *Normans* it was esteemed one of the best peopled Cities in the Isle, and enjoyed a great Trade both by *Sea* and *Land*, inasmuch that King *Edward* the Third ordained here his Staple for the Mart of *Wools, Leather, and Lead*. But its pristine glory has been much eclipsed by the several shocks of ill Fortune it hath met with; nevertheless it is a place well inhabited and frequented, enjoyeth a good Trade, and its Markets on *Fridays* is well served with *Provisions*, and its Shops furnished with *Commodities*. It is pleasantly seated on the side of a Hill, and on the River *Witham*, which divideth it self into several streams and waters in the lower part of the City, over which are divers Bridges for the accommodation of the Inhabitants in their passage to and fro. It is dignified with an

Episcopal

Episcopal See, where the *Bishop* hath his Palace, and whose Diocess is the greatest of any in *England*, numbring within its Jurisdiction 1255 *Parishes*; of which 577 are *Impropriations*. The civil Government of this City is committed to the care of a *Major*, 2 *Sheriffs*, 12 *Aldermen*, who are clothed in *Scarlet*, besides a *Recorder*, *Town Clerk*, 4 *Chamberlains*, a *Sword-bearer*, 4 *Serjeants at Mace, &c.* It enjoyeth ample Immunities; sendeth two Representatives to Parliament; and is a County within it self, whose Liberties extends about 20 miles in compass, and is called the County and City of *Lincoln*.

The Isle of *Asbolme*, made so by the Rivers *Trent, Dun, Idel*, and others. It is a large tract of ground, in which are seated several Towns: the flat and lower part of the Isle towards the Rivers is Moorish, and yieldeth a sweet Shrub, called by the Inhabitants *Gall*. In this part have been great and tall *Pin-trees* digged up. And the middle part (which is a rising ground) is fertile, and produceth great store of *Flax*.

Isle of Asbolme.

Barton, seated on the *Humber*, where there is a considerable Ferry into *Yorkshire*, which doth much advantage the Town, which is large and stragling, yet hath but an indifferent Market on *Saturdays*.

Barton.

Grimby Magna, seated near the *Humber*, or rather the *Sea*, and in a flat and Marthy rich ground. This Town was formerly very large, having two *Parish Churches*, enjoyed a good Trade; but its Harbour (which was then commodious) being choaked up, hath much eclipsed its trade and grandure, having now but one Church, which for largeness giveth place to few *Cathedrals*. Here was formerly a *Castle*, an *Abby*, a *Nunnery*, 2 *Priories*, and 2 *Chantries*, which time hath reduced to ruins, and in their places are erected Houses. It is a *Town Corporate*, enjoyeth several Immunities; hath the benefit of a *Port Town*, and keepeth Courts for trial of *Causés* and *Felons*; sendeth *Burgesses* to Parliament, is governed by a *Major*, 12 *Aldermen*, a *Recorder*, 2 *Justices of the Peace*, 2 *Town Clerks*, 2 *Chamberlains*, and other sub-Officers, and hath a good Market for *Provisions* on *Wednesdays*.

Grimby Magna.

Thong-Caster, or *Caster*, a well compacted Town, which hath a very considerable Market on *Saturdays*, chiefly for *Swine, Sheep* and *Cattle*. This Town is of note for its ancient Castle so called, said to be built by *Hengist* the *Saxon*, who had a grant from *Vortiger* for so much ground as an *Ox-hide* would compass, which he cut into small Thongs, so that it encompassed a tract of ground, on which he built the Castle, and there seated and defended himself.

Thong-caster.

Lowth, a large, well built and inhabited *Town Corporate*, governed by a *Warden* and 7 *Assistants*, and hath weekly two Markets, on *Saturdays* and *Wednesdays*, which is the chief, and is very considerable for *Cattle, Horses, Swine, Corn*, and all sorts of *Provisions*.

Lowth.

Stamford, seated on the *Welland*, which being now made navigable is no small advantage to the Town and Country adjacent, its Inhabitants driving a considerable Trade, especially for *Mault* and *Free-stone*. It is a Town of good antiquity, from whence the *Roman High-street* led to the North, and in the Reign of King *Edward* the Third here was a *Colledge* for the Professors of the Arts and Sciences, who thence removed to *Brazen-Nose Colledge* in *Oxford*. It is a large, well inhabited and frequented Town containing several Streets, hath 6 *Parish Churches*, is beautified with fair Buildings, is begirt with a Wall, and hath weekly 2 Markets, on *Mondays*, which is but small; and on *Fridays*, which is well furnished with *Corn, Cattle*, and all sorts of *Provisions* in great plenty.

Stamford.

Grantham, seated on the *Witham*; a *Borough Town*, of good account and well inhabited; is governed by an *Alderman* and 12 *Justices of the Peace*, and hath the election of *Parliament men*. The Town is beautified with a fair Church, which hath an exceeding lofty *Spire-Steeple*; and its Market on *Saturdays* is very considerable, and well served with *Corn, Mault, Sheep*, and all sorts of *Provisions*.

Grantham.

Boston

Boston.

Boston, a fair, large *Borough* and *Town-Corporate*, of good antiquity; enjoyeth several Immunities, electeth *Parliament men*, and is governed by a *Major*, 12 *Aldermen*, *Burgesses*, a *Recorder*, &c. It is commodiously seated on both sides the *Witham*, over which it hath a fair *Woodden-bridge*, and being near its influx into the *Sea*, is a place of considerable account, is well frequented and inhabited, enjoyeth a good Trade, and its Markets on *Wednesday* and *Saturday* are very great, especially for Provisions both *Fish*, *Fowl*, and *Fowl*. Its Market-place is fair and spacious, as also its Church, whose *Lantern* or *Tower* serves as a Landmark to Sailors.

Kirton.

Kirton, seated on a *Sandy-ground*, and so called from its Church; a fair structure built of *Free-stone* Cathedral-wise in form of a *Cross* with a broad *Steeple* in the middle. This whole Township is very large being divided into 4 *Hamlets* or *Vintins*, viz. *Kirton-Willington*, *Kirton-Meers*, *Kirton-Skel-dike*, and *Kirton-Holme*; and had formerly a Market, which is now dis- used.

Crowland.

Crowland, or *Croyland*, a Town of good account amongst the *Fenny-people*, but much greater in times past for its famous *Abbey*, founded by *Æthelbald* King of the *Mercians* in *Anno* 716. It is seated very low and dirty, and so shut up that there is no access to it but by the North and East sides, and that by narrow *Cawswaies* not admitting of *Carts*, inasmuch that the Inhabitants have a Proverb, *That all the Carts that come to Crowland are loaded with Silver*. And the situation is much like to *Venice* in *Italy*, the Streets being severed from each other by *Dikes* or *Water-courses*, on the banks of which are set *Willow-trees*. The chief Riches here gained is by *Fish* and *Fowl*, which are taken in great plenty; and here is a small Market.

Spalding.

Spalding, a pretty fair Town, seated very waterish and by a navigable River, which doth occasion it to have a very good Trade, having several *Vessels* and *Barges* belonging to them; and here is every *Tuesday* a very good Market for *Corn*, *Cattle*, and *Provision*.

Dunington.

Dunington, seated in a flat, like *Spalding*; an indifferent Town, but hath a very considerable Market on *Saturdays* for Provisions, and *Hemp* in great abundance.

County of
Middlesex de-
scribed.

MIDDLESEX, a County of a small extent, but every where gar- nished with Towns and fair buildings, which are the habitations of the No- bility, Gentry, and Citizens of *London*. It is blest with a sweet and wholesome Air, and for fertility of Soil both for Tillage and Pasturage, may compare with any shire in *England*, especially for its bigness.

It is severed into 6 *Hundreds*, in which are seated 73 *Parish Churches*, (be- sides those of *London*, and its several *Chapels of Ease*) and is traded unto by 4 *Market Towns*, besides the Markets in *London*.

As to the description of the Towns in this County, I shall treat of those of most note, and conclude with *London*, the Metropolis of the whole Kingdom; and first with *Uxbridge*.

Uxbridge.

Uxbridge, seated on the high Road from *London* to *Oxford*; a large, well inhabited and frequented Town, well accommodated with *Inns*, is governed by two *Bailiffs*, 2 *Constables*, and 4 *Headboroughs*, and hath a Market on *Thursdays*, which is well served with *Corn* and *Provisions*.

Hampton.

Hampton, seated on the banks of the *Thames*, of chief note for its Palace of the King called *Hampton-Court* (delightfully seated by two Parks) first built by *Cardinal Woolsey*, and afterwards much enlarged by King *Henry* the Eighth, containing now within it several large Inner-Courts, which are in- closed with fair Buildings, in one of which is a stately Fountain.

Hillworth.

Hillworth, or *Thistleworth*, a fair large and pleasant Town, seated on the banks of the *Thames*, well inhabited by Gentry and the Citizens of *London*; as are *Twickenham*, *Teddington*, *Chiswick*, *Hammersmith*, *Fulham*, and *Chelsey*; Towns all seated on the banks of the *Thames*.

Nigh

Nigh unto *Thistleworth* is *Sion-house*, a large Structure, now belonging to the Countess of *Northumberland*, but in times past was a Monastery, erected by King *Henry* the Fifth to the honour of our Saviour, the *Virgin Mary*, and *Bridget* of *Sion*, for Religious Virgins; where he appointed so many Nuns, Priests, and Lay-Brethren, as in number did equal our Saviour his Apostles and Disciples; and on the other side of the *Thames* opposite unto it he erected another for *Carthusian Monks*, named *Jesus* of *Bethlehem*.

Sion-House.

Brentford, containing the Old and the New, both seated on the Western Road, which doth occasion it to be so well accommodated with *Inns*. In New *Brentford* is kept the Market, which every *Tuesday* is very well served with *Corn* and Provisions, which are much bought up by the *Londoners*.

Brentford.

Kensington, a thorough-fare Town, well inhabited by Gentry and Persons of Honour; as are *Hampstead*, *Highgate*, *Hornsey*, *Tottenham-Highcross*, *Muswell-Hill*, *Edmonton*, &c. Towns near adjacent to *London*.

Kensington.

London, the epitomy and glory of the Kingdom; was the Seat of the *British* Empire, as now the Royal-Chamber of our Kings; a City of great antiquity, said to be built by *Brute* the *Trojan*; but all agree it was re-edified by King *Lud* in *Anno Mundi* 5131, who called it *Luddestown*. It is seated in a healthful Air, and no less pleasantly than commodiously on the banks of the *Thames*, which severeth it into two (but unequal) parts, which are joyned to- gether by a stately *Stone-bridge*, so covered with Houses that it seemeth rather a Street than a Bridge.

London.

This City is begirt with a Wall, first built by *Constantine* the Great, at the suit of his Mother *Helena*, and hath for entrance 7 principal Gates; but now as contemning bondage it hath enlarged it self on all sides with spacious Sub- urbs, inasmuch that she hath joyned her self to the City of *Westminster*, which name is now swallowed up, all passing under the general name of *Lon- don*.

The City of *Westminster*, according to Mr. *Norden* in his description of *Middlesex*, was in time past called *Thorney*, or *Dorney*, and was an Isle en- compassed with the *Thames*; which divided it self, and one branch passed be- tween *Chairin-Cross* and *Kingstreet* through *St. James's*, including *Tut-hill*, which said Isle was so called, as being overgrown with *Briars* and *Thorns*; but in the time of King *Lucius* it is said to be cleansed, and the foundation of the great Temple of *St. Peters* was laid, which was raised out of the ruins of a former, dedicated to *Apollo*, where the *Trinovantes*, or *Troinovantes*, did sacrifice *Bulls*, *Bullocks*, *Stags*, and such like Beasts, to *Diana Tauropolia*, whom the *Gentiles* called the *Queen of Heaven*.

This City or part of *London* is the noblest (though not the longest) being taken up by the King, the Nobility, Gentry, and such as have their depen- dancy on the Court or Law, being sufficiently graced with fair and beautiful Edifices; as 1. The Palaces of his Majesty *Whitehall* and *St. James's*, to which is joyned a small, but delightful Park, wherein is a *Pall-Mall*, said to be the best in *Christendom*. 2. The Courts of *Judicature* and *Houses of Parlia- ment*, now all known by the general name of *Westminster-hall*, and was an- ciently the Palace of the Kings of *England*. 3. Its Collegiate-Church of *Westminster*, which was formerly the Temple of *St. Peter*, and now renown- ed for its Chapel built by King *Henry* the Seventh, being beautified with the Tombs of the *Kings* and *Queens*, and many of the Nobility of *England*; nor is it less famous for the Inauguration of our Kings and Queens. 4. The Palace of her Majesty, *Somerset-house*; and, 5. The Houses of the Nobility. And thus much for the City of *Westminster*.

The Eastern part, or Suburbs of *London* beyond the *Tower*, is taken up by those that have relation to the Sea; and the whole City thus taken is now of a great extent, being in length from *Black-wall* in the East to *Tuttle-fields* in the West, about six miles; in breadth 1, 2, and in some places 3 miles, and is said to make in circuit about 14 or 15 miles, in which extent are numbred about 500 Streets and Lanes, and contains (according to computation) about 75000 Houses; and by the great number of Houses the Inhabitants may be gueſt

V

quest at, which without doubt are very numerous; and if we consider its great Trade and Commerce with other Nations, its *Riches*, *Jurisdiction*, *Bounds*, and *populousness*; its good Government, the ingenuity of its Inhabitants in *Letters*, *Arts*, and *Manufactures*, &c. it may deservedly be numbered with any City of the highest rank in the World.

The Buildings of note belonging to this City, are its *Inns of Court* and *Chancery*. *Guildhall*, a stately Structure, where the Courts of *Judicature* are held; and where the *Lord Major*, *Aldermen*, and *Common Council* meet, for the negotiating the Affairs of the City. The *Royal Exchange*, built quadrangular, now said to be the best in the known World. The *Tower*, a place of large extent, well furnished with a *Magazin* or *Arsenal* of warlike Munition both for Sea and Land-service, and doth contain (according to observation) a *Kings Palace*, a *Prison*, an *Armory*, a *Mint*, a *Wardrobe*, and an *Artillery*, each having their peculiar Officers; and for Buildings resembleth a Town, having a *Parochial Church*, exempted from the Jurisdiction of the Archbishop. *Gresham Colledge*, given to the City by Sir *Tho. Gresham*, with the allowance of liberal Salaries to professors of several *Arts* and *Sciences*, to read Lectures for the advancement of Learning amongst the Citizens. The *Colledge of Heraldry*, called the *Heralds Office*; where the Records for the Arms, Descents, and Pedigrees of the *Nobility* and *Gentry* are kept. *Doctors Commons*; which is taken up by the *Civilians*. The *Colledge of Physicians*. The *Halls* of the several Incorporated Companies. The Houses of *Correction*, amongst which that of most note is *Bridewell*, a large Building. The *Hospitals*, viz. *St. Bartholomews*, *Christ Church*, and the *Charter-house* (or *Suttons Hospital*), being the noblest Hospital in the Kingdom, in which are well maintained 80 *Old men*, and 40 *Boys*. The *Sessions House*, for the trial of Malefactors; and lastly, its *Churches* and *Free Schools*.

This City within the Walls and Freedom is divided into 26 *Wards*, and the Government thereof committed to the care of so many *Aldermen*, each having the overseeing of his several Ward; and besides these *Aldermen* there are 2 *Sheriffs*, which are yearly chosen, as also a *Lord Major*, who is the principal Magistrate.

To the making a compleat City there are several principal parts or helps required for the supportation thereof, and without which it cannot well stand; to wit, *Husbandry* and *Artificers*, for the providing Food and Rayment for its Inhabitants; *Arms* and *Ammunition*, for its defence; the *Priesthood*, for Divine worship; *Judges*, *Councillors*, &c. for the administration of Justice; and *Traffick*, for the bringing in of Riches: In all which this City in a liberal measure is blest with.

MONMOUTHSHIRE. This County (formerly part of *Wales*) is blest with a healthful Air, and although very *hilly* and *woody*, yet is exceeding fertile, (especially the Eastern parts, which are not so hilly as the Western) the Hills feeding abundance of *Cattle* and *Sheep*; and the Valleys bearing great crops of *Corn* and *Grass*; and the rather for its being watered with so many fresh Streams; the chief of which are the *Uske*, *Wye*, *Munow*, *Ebunith*, *Sqweay*, and the *Rumney*, which fall into the *Severn Sea*. It is divided into *Hundreds*, in which Tract are seated 127 *Parish Churches*, and is traded unto by 7 *Market Towns*.

Monmouth, no less pleasantly than commodiously seated on the banks of the *Wye* and *Munow*, which doth almost encircle it, over each of which is a Bridge. In the midst of the Town, near the Market-place, standeth a (once stately, but now ruinous) Castle. It is a fair, large, well built, and inhabited and frequented Town, enjoying large Immunities, and sendeth a *Burges* to Parliament. It is governed by a *Major*, 2 *Barbiffs*, 15 *Common Councillors*, a *Town Clerk*, and other sub-Officers; and hath a considerable Market for *Corn* and *Provisions* on *Saturdays*.

Chipsflow, seated on the side of a Hill which is washed with the *Wye*, near its fall into the *Severn*; a Town formerly very famous, and of great resort, being

being said to be raised out of the ruins of *Venta Silurum*, the chief City of the *Silures*. It is a large, well built, inhabited and frequented Town, and hath a Market on *Saturdays*, which is very good for *Corn* and *Provisions*, and very considerable for *Swine*.

Carlion, or *Caerleon*, an ancient and flourishing City of the *Romans*, which is evidenced by the ruins of its stately Buildings, as *Palaces*, *Temples*, and *Theaters*, enclosed within fair Walls, the *Water-pipes*, *Vaults*, *Hot-houses*, and *Roman Coins* oft digged up. And here the Noble *Arthur* kept his Court, and here was a famous Colledge for 200 Students in *Astronomy*, and other the liberal Arts and Sciences. This Town (which is indifferent large) is commodiously seated on the banks of the *Uske*, over which it hath a large wooden Bridge; yet its Houses for the generality are built of Stone, and its Market (which is but indifferent) is on *Thursdays*.

Uske, seated on a River so called; a large Town, beautified with well built Stone-houses, and hath a very good Market on *Mondays* and *Fridays*.

Abingavenny, seated at the meeting of the *Uske* and the *Keweny*, once a place of great strength; it is a large Town, hath well-built Houses, enjoyeth a good Trade for *Fianels* and *Straw-Hats*, here made in great plenty; and its Market, which is on *Tuesdays*, is very considerable for *Cattle*, *Provisions*, &c.

The County of *NORFOLK* is of a different Soil, but may be comprised under two heads; to wit, *Champaign* and *Wood-land*; yet notwithstanding about the Towns it is of a *Clayey*, *Chalky*, and fat Earth, and not without Wood. That which is comprised under the head of *Champaign* is along the Sea-Coasts, and from *Thetford* to *Burnham*, and so Westwards, and affords great plenty of *Corn*; and on the Heathy great flocks of *Sheep* are fed. The *Wood-land* part is chiefly for grasing; yet not without *Corn* ground.

The ancient Inhabitants known to the *Romans* were the *Iceni*, and afterwards became part of the Kingdom of the *Angles*.

The Commodities that this Country plentifully affordeth, are *Worsted*, *Stockings*, *Norwich Stuffs*, and *Herrings*.

The chief Rivers that water this County are the *Ouse*, *Waveny*, *Yare*, and the *Thryne*. It is generally well inhabited with *Gentry*, is very populous and full of *Towns* and *Villages*, numbring 660 *Parish Churches*, which are the most of any County in *England*; and is traded unto by 27 *Market Towns*.

Norwich, a City of great antiquity, and formerly of as great splendor when the Seat of the *East Angles*; since which it hath undergone several calamities by *Fire*, *Sword*, and *Pestilence*; and notwithstanding all its shocks of ill fortune, it is at present a fair, large, and populous City, and enjoyeth a great Trade, especially for their *Stockings*, *Stuffs*, and *Manufactures* here made. It is commodiously seated on the banks of the *Yare*, which severeth it; but is joynted together by several Bridges, and in a pleasant Valley. It is about a mile and half in length, and almost of the like breadth, and is encompassed with a Wall (except on the side seated on the River,) and hath 12 Gates for entrance; and for Divine worship 32 *Parish Churches*, besides *Chapels*. Its chief buildings are the *Cathedral*, the *Bishops Palace*, the *Palace* of the Duke of *Norfolk*, the *Market-house*, the *Cross*, and the House of *Correction*, made of *Free-stone*. Here is an *Hospital* where 100 poor Men and Women are maintained. This City may not improperly be called an Orchard in a City, or a City in an Orchard, by reason of the pleasant intermixture of the Houses with Trees. It was first governed by 4 *Bailiffs*; but in the Reign of *Henry the Fourth* it was incorporated into a *Mayoralty*, and made a County; whose limits extend to *Eaton Bridge*. It enjoys several Immunities, sends *Burges* to Parliament, and is the See of a Bishop. Its Markets on *Wednesdays*, *Fridays*, and *Saturdays*, are very great, and well stored with *Corn*, *living Cattle*, *Leather*, *Tarn*, *Worsted*, and all sorts of *Provisions*.

County of
Dorset.

Monmouth.

Chipsflow.

Lynn.

Lynn, by *Lynn Regis*, seated almost at the influx of the *Ouse* into the *Wash*; a fair, large, and well-built *Borough Town*, numbring 3 *Parish Churches*, of good antiquity, enjoying ample Immunities, which were granted them for their good service against the outlawed *Barons* in the life of *Henry*. It is governed by a *Major*, 12 *Aldermen*, hath a *Recorder*, *Sword-Bearer*, and other sub-Officers, sendeth its Representatives to Parliament; for its defence, is encompassed about with a *Wall* and a deep *Trench*; is well watered; having 2 *Rivulets* which run through the *Streets*, which are passed over by 13 *Bridges*. It is well inhabited by *Merchants* and *Tradesmen*, having a commodious *Haven*; and its *Markets* on *Tuesdays* and *Saturdays* are well served with *Commodities* and *Provisions*.

Yarmouth.

Yarmouth, seated on the *Tyre*, at its influx into the *Sea*. It is a place of great strength, as well by Nature as Art, being esteemed the *Key* of this *Coast*. The *Town* is large, yet hath but one *Church*; but that is so large that it serveth for two *Ministers*. Its *Buildings* are good; it is a place of a great resort, is well inhabited and traded unto; and the more as being the ready passage to *Holland* for the *Packet-Boat*, and other *Vessels*. About this *Coast* great abundance of *Herrings* are caught in *September*, and as great quantities of *Mackerels* in the *Summer* season. It is a *Town Corporate*, having for its chief *Magistrates* 2 *Bailiffs*; it enjoyeth several Immunities, and sends *Burgesses* to Parliament. Its *Market* is on *Saturdays*, which is very great for *Corn*, *Fish*, and *Provisions*.

Windham.

Windham, seated in a dirty bottom, hath an indifferent good *Market* for *Corn* and *Provisions* on *Fridays*; but chiefly for *Stockings*, *Woolen-Spoons*, *Tappes*, and *Spindles*, which are here made and sold by the *Inhabitants* in great abundance.

Swafton.

Swafton, seated on a *Hill*; a large and well built *Town*, full of *Inns*, and well inhabited by *Shopkeepers*, who drive a good trade. Its *Market*, which is on *Saturdays*, is very well served with *Corn* and *Provisions*, being esteemed one of the best *Market Towns* in the *County*.

Northwalsham.

Northwalsham, seated in a level, not far from the *Sea*; a fine *Market Town*, which on *Thursdays* is well provided with *Corn*, *Flesh*, and other *Commodities*.

County of Northampton described.

NORTHAMPTON, an inland *County*, of a fat and rich *Soil* both for *Tillage* and *Pasturage*, every way recompensing the *Husbandmans* pains and industry, both for its excellent *Grain*, and for feeding and breeding of *Store* of *Sheep*, *Horses*, and *Cattle*, inasmuch that here is observed to be less waste ground than in any *County* in the *Kingdom*.

Northampton.

It is blest with a healthful *Air*; it is very populous and full of *Gentry*; inasmuch that in many places 25 or 30 *Steeple*s present themselves to view at one time.

It is well watered with *Rivers* and *fresh Streams*; as the *Welland*, the *Nen* or *Aufon*, the *Ouse*, *Charwell*, &c.

This *County* is severed into 20 *Hundreds*, in which are numbred 326 *Parish Churches*, and is traded unto by 11 *Market Towns*.

Northampton, delightfully seated on the banks of the *Nyne*, which washeth its South and West parts, over which it hath two *Bridges*. It is a *Town* of good antiquity, and once very large, but this, as all other places in the *Kingdom*, felt the sore hand of the *Dame*, with other *Calamities*, and lately it was laid in its *Ashes* by a merciless *Fire*; but is again almost rebuilt, and will be of better stature than before. Its extent is large, numbring 4 *Parish Churches* within its *Walls*, which were of great strength before their demolition. On the Western side of the *Town*, an *eminence* is mounted a large *Castle*, but so ruinous that it seemeth ready to fall. It is a *Town Corporate*, sendeth *Burgesses* to Parliament, is governed by a *Mayor*, 2 *Bailiffs*, 12 *Magistrates*, a *Recorder*, *Town Clerk*, with other sub-Officers. It enjoyeth a very considerable *Trade*, is very well inhabited, being the place where the *Affizes* are kept, and the general place for the *Justices* of the *Peace* to meet

meet for the *County*; and its *Market*, which is on *Saturdays*, is very great for *Cattle*, *Corn*, *Provisions*, *Leather*, *Shoes*, and several *Country Commodities*.

Peterburgh, seated on the *River Aufon*, or *Nen*, (which is navigable for *Barges*, over which it hath a *Bridge* which leadeth to *Huntingtonshire*;) and in a *Marshy ground*. It is a *City* of great antiquity, and was of good account in the time of the *Saxons*; for it is said that *Wolpher*, King of the *Mercians*, for the expiating his crime in the cruel murdering his Sons *Wolphald* and *Rufin* for embracing the *Christian Religion* (to which he was some years after converted himself) in *Anno 633*, finished a most stately *Monastery*, and dedicated it to *St. Peter*, from which the *City* took its name, being before called *Maddeshamstede*. It is at present a *City* of no great extent, having but one *Parish Church* besides its *Cathedral*, raised out of the *Monastery*; a stately *Structure*, where lieth the *Bodies* of two unfortunate *Queens*, *Katherine* of *Spain*, and *Mary of Scots*. This *City* enjoyeth several Immunities, sends *Burgesses* to Parliament, is honoured with the Title of an *Earldom* and the Seat of a *Bishop*, as also of a *Dean*, who keepeth his Court for the hearing of *Causess*. Its *Streets* of late are indifferent well ordered, its *Houses* well built, and hath a spacious *Market-place*, well resorted unto on *Saturdays*.

Not far from this *City*, Westwards, was seated the ancient *City Durobrivae*, called by the *English Saxons*, *Normanchester*.

Oundle, pleasantly seated on the banks of the *Nen*, over which it hath two good *Bridges*; a well built uniform *Town*, beautified with a fair *Church*, and a *Free School*; hath a very great *Market* for *Cattle*, *Corn*, *Flesh* and *Fowl* on *Saturdays*.

Higham Ferrers, situated on an *Ascent*, and on the banks of the *Nen*; an ancient *Borough* and *Town Corporate*, governed by a *Major*, 7 *Aldermen*, 13 *Capital Burgesses*, a *Steward*, &c. is graced with a fair *College*, hath a *Free School* for the education of *Youth*, and an *Alms-house* for the relief of poor *People*; and hath a *Market* on *Saturdays*, which is well resorted unto.

Wellingborough, seated also on the *Nen*; a large and well inhabited *Town*, of some note for its *Springs of Medicinal water*, not far distant from the *Town*. It is beautified with a fair *Church*; and a *Free School*; is a large and well inhabited *Town*, and hath a *Market* on *Wednesdays*, which is well served with *Corn* and *Provisions*.

Daventry, seated on the side of *Borow-hill*; a good *Town*, governed by a *Bailiff*, *Aldermen*, a *Steward*, and 12 *Free-men*, and hath a *Market* on *Wednesdays*, which is well provided with *Horses*, *Cattle*, *Sheep*, *Corn*, and *Provisions*.

Not far from this *Town* is *Weldon*, which was a *Station* of the *Romans*, and where there was a *Monastery* founded by the holy *Virgin St. Werberg*, Daughter of King *Wolpher*, who had here his *Royal Seat*.

Brackley, seated on a bank of the *Ouse*, and on the edge of the *County* towards *Buckinghamshire*; an ancient and large *Town Corporate*, containing two *Parish Churches*, had formerly a *College*, now made use of for a *Free School*; is governed by a *Major* and *Aldermen*, sendeth *Burgesses* to Parliament, and hath a small *Market* on *Wednesdays*, which in former time was considerable, being the staple *Town* in the *County* for *Wool*.

NORTHUMBERLAND, a *County* of a sharp and piercing *Air*, and much troubled with pinching *Frosts*, boisterous *Winds*, and deep *Snows*, which would be more troublesome to its *Inhabitants*, were it not for the great abundance of *Sea-Coal* hatched in great plenty.

It is a *County*, for the most part, of an ungrateful *Soil*, being very rough, hilly, and very hard to be manured; but the parts towards the *Sea*, by the industry of the *Husbandman* in manuring it with the *Sea-weed* are indifferent fertile.

It is

It is well watered with *Rivers*, which (with the *Sea*) afford to the Inhabitants great plenty of *Fish* and *Fowl*.

In this County are numbred 46 *Parish Churches*, many of which are very large, having their *Chapels* of *Ease*, and is severed into 6 *Wards*; and for the accommodation of the Inhabitants is traded unto by 6 *Market Towns*.

The Inhabitants that posselt this County before the *Romans*, were the *Ottadini*, and being brought to the Jurisdiction of the *English Saxons* by *Osca* Brother to *Hengist*, and by his Son *Jefusa*, had first official Governours under the fealty to the Kings of *Kent*: After that, when the Kingdom of the *Benenicii* was erected, that which reached from the *Scotish Brith* to the *Tee* (being the best part) was subject to the Kings of *Northumberland*, who having finished their period, that which lay beyond the *Tweed* passed for *Scotland*; then was it yielded up to *Egbert* King of the *West Saxons*, who laid it to his own Territory: and soon after the expulsion of the *Danes* it was governed by *Earls*.

This County sheweth abundance of Antiquities, not only along the *Pitts Wall*, which runneth by its Southern part, but elsewhere; amongst which these following are worthy of note: *Readquire*, a steep Mountain, was oft-times the place of Conterence for the *East Marshes*. The *Hermitage*, not far from *Wakeworth*, by the Water; a Chapel cut out of a Rock, without *Beams*, *Rafter*s, or any piece of Timber, and the *Altar* was also hewed out of the same Rock; and this was the place of devotion for a *Hermit*, who lived in a *Cell* within the Rock. *Risingham*, seated on the River *Rhead*, a place of great Antiquity, which ('tis said) *God-Magon* for sometime defended against a certain *Soldan*, or *Heathenish Prince*. Through the *Pitts Wall* runneth the *Tyne*, which watereth two *Dales*, each having their Hills so boggy, with standing Water on the top, that no Horse-man is able to ride through them; and yet in many places are great heaps of Stones (called *Laws*) supposed to be cast up in memory of some persons there slain.

The chief places are,

Newcastle, situate on an Eminence, and on the North banks of the *Tyne*, over which it hath a fair Bridge. This Town before the *Conquest* was called *Monk-chester*, as being in the possession of *Monks*, which name was changed to *Newcastle* by *Robert*, Son to *William* the *Conquerour*, from a *Castle* there built by him. It is a Town and County of it self, being incorporated; and governed by a *Major*, 12 *Aldermen*, a *Recorder*, and other sub-Officers; and amongst its Immunities sends its Representatives to Parliament; 'tis a place of good largeness, numbring 4 *Parish Churches*, besides one in *Gates-head*; it is beautified with good Buildings, and by reason of its deep and secure Haven is much inhabited and frequented by *Merchants* and *Tradesmen*, having several Vessels belonging to the Town, but is of chief note for its *Coal* trade. It is a place of great strength, for besides its *Castle*, now something ruinous, it is begirt with a strong Wall, on which are many Turrets, and hath for entrance 7 Gates. Here are weekly two Markets, on *Tuesdays* and *Saturdays*, which are both very considerable for all sorts of Provisions.

Morpeth, situate on the *Wensbeck*; a very fine incorporated Town, governed by 2 *Bailiffs*, and sendeth *Burgesses* to Parliament. It is strengthened with a *Castle*, and hath a Market on *Wednesdays*, which is esteemed the best in the County for *Corn*, *Cattle*, and Provisions.

Barwick, commodiously seated betwixt *England* and *Scotland*, but on the North or *Scotish* side of the *Tweed*, over which it hath a stately Bridge, sustained by 14 or 15 Arches, being a Town and County of it self. It is a place of great strength, as well by Nature as Art, being almost encompassed with the *Sea* and the *Tweed*, and strongly fenced about with Walls, a *Castle*, and other Fortifications, as being a place of such great importance to *England*. It is a *Town Corporate*, governed by a *Major*, *Bailiffs*, and *Burgesses*, and hath the election of *Parliament men*. It is large, and populous, its Houses well built, enjoyeth a good Trade, especially for *Salmon* and *Corn*, and its Market on *Saturdays* is very considerable.

Along

Along the Coast of this County are the Isles of *Cockes*, *Fern*, and *Holy Isle*, which are small Isles of a barren and ungrateful Soil, and but thinly inhabited.

NOTTINGHAM, a County best with a wholsom Air; its Soil is different, the South-east part, which is watered with the *Trent* and other fresh Streams, is most fertile and apt for *Corn* and *Grass*, and is called the *Clay part*; and the Western part, wherein is the Forest of *Shirwood*, a large tract of ground, which is well clothed with Wood, and provided with Game; and this part, from the temperature of the Earth, is called the *Sandy part*.

This County produceth a Stone softer than *Alabaster*, but being burnt maketh a Plaster harder than that of *Paris*, with which they floor their upper Rooms.

The form of this Shire is oval, doubling in length twice its breadth. It is severed into 8 *Hundreds* or *Wapontacks*, in which are numbred 168 *Parish Churches*, and hath intercourse of traffick with 9 *Market Towns*.

Nottingham, commodiously seated on an Eminence and on the banks of the *Leane*, which at a small distance loseth it self in the *Trent*, over each of which Rivers there is a fair *Stone-bridge*, besides two others over two Ponds, called the *Cheney Bridges*. It is a large Town, numbring 3 *Parish Churches*, is replenished with well built Houses, its Streets are fair, and graced with a spacious Market-place; on the West side of the Town is the *Castle*, which (before its defacement in the late Wars) was a place of great strength and importance. It is a Town of good antiquity, and amongst its places of remark here are many strange *Vaults* hewed out of the Rocks, especially under the *Castle*, which are descended by divers steps, and have their several Rooms and Stairs artificially made; also in the Hill are Houses, with Rooms, *Chimneys*, winding Stairs, and Windows, wrought out of the solid Rock. This Town enjoys several Immunities, electeth *Burgesses* for Parliament, is governed by a *Major*, 6 *Aldermen*, 2 *Sheriffs*, a *Town Clerk*, and other sub-Officers; it enjoyeth a good Trade, is well inhabited and frequented, and hath weekly 3 Markets, viz. on *Wednesdays*, *Fridays*, and *Saturdays*, which is very considerable for *Cattle*, *Corn*, and Provisions.

Newark, situate on the high Road to *Tork*, and on the *Trent*, over which it hath a Bridge. It is a good large *Town Corporate*, governed by an *Alderman* and 12 *Assistants*, is well inhabited, enjoyeth a good Trade, and hath a considerable Market for *Corn*, *Cattle*, and Provisions on *Wednesdays*.

Mansfield, situate in the Forest of *Sherwood*; a well inhabited, well built, and large Town, enjoying a good Trade for *Mault*, and hath a very considerable Market for *Corn*, *Cattle*, *Mault*, *Swine*, and Provisions on *Thursdays*.

Redford, situate on the River *Idel*; an ancient *Town Corporate*, which electeth *Burgesses* to Parliament, is governed by 2 *Bailiffs*, 6 *Aldermen*, and a *Steward*, and hath a great Market for *Corn* and Provisions on *Saturdays*.

The County of **OXFORD** is blest with a delectable Air, which doth occasion it to be much inhabited by *Gentry*; and the rather, as being of a fertile Soil for *Corn* and *Fruits*, well stored with *Cattle*, and interlaced with pleasant Hills, wherein (and in the Downs) are found variety of Game. It is well watered with Rivers, as the *Ouse*, or *Isis*, the *Tame*, *Cherwel*, *Windrush*, and *Ebenode*.

It is divided into 14 *Hundreds*, in which tract is seated 280 *Parish Churches*, and is traded unto by 12 *Market Towns*, and graced with a beautiful and stately City.

Oxford, the Seat of the *Muses*, exceeding all Universities in the World, except her Sister *Cambridge*. It is a place of great antiquity, said to be consecrated unto Learning in the time of the Old *Britains*; and was much cherished and countenanced by King *Elfred*, who sent thither his Son *Ethelward* on

County of
Nottingham.

Nottingham.

Newark.

Mansfield.

Redford.

County of
Oxford de-
scribed.

Oxford.

Newcastle.

Morpeth.

Barwick.

on purpose to invite the young Nobles to study the *Arts and Sciences*. It is a City commodiously seated both for pleasure and profit between the *Ips* and the *Charwel*, which encompasseth three parts of the City, over which for the convenience of passage it hath several Bridges. The City is large, numbring 14 *Parish Churches* besides its *Cathedral*, a large Structure, and is at present a fair and stately City, adorned with well-built Houses, and beautified with divers curious Structures, as the *Kings Palace*, now the *Mannor House*, the 16 *Colledges*, 8 *Halls*, the *Schools*, wherein is a stately *Library*, and *Theater* newly erected. It enjoyeth ample Immunities, keepeth *Courts* for all Actions without limitation of time; hath the election of 4 *Burgesses*, 2 for the University, and 2 for the City. It is a place very populous, and well resorted unto, hath weekly two Markets, on *Wednesdays* and *Saturdays*, which is the chief, and very considerable for Provisions and all sorts of Grain, especially *Barly*; and also enjoys a great trade for *Mault*.

Burford, scituate on an Ascent near the Downs, and on the River *Windrush*, which springeth out of the *Cotswold*; a large and fair Town Corporate, governed by two *Bailiffs*, and other sub-Officers, and hath a well frequented Market for *Corn*, *Cattle*, and *Provisions* on *Saturdays*; and is of chief note for *Saddles* here made.

Woodstock, a well compacted Borough Town, governed by a *Major*, 4 *Aldermen*, &c. enjoyeth several Immunities, sends *Burgesses* to Parliament, and hath an indifferent good Market on *Tuesdays*. It is delightfully seated, and of some note for its large *Park*, wherein was *Woodstock-Bower*, built by King *Henry* the first, and where he kept his Mistress, the beautiful *Rosamond Clifford*, which was here poisoned by his enraged Queen *Eliano*.

Banbury, seated on the *Cherwel*, and in a Flat; a pretty large, wealthy and beautiful Town Corporate, governed by a *Major*, 12 *Aldermen*, &c. sends *Burgesses* to Parliament; hath a very considerable Market for *Cattle*, *Sheep*, and *Provisions* on *Thursdays*, and is of some note for its *Cakes* and *Cheese*.

Tame, pleasantly seated on the River so called, which (with its branches) doth almost encompass it, and over which it hath a Bridge which leadeth into *Buckinghamshire*. It is a large Town, having one spacious Street, in the midst of which is the Market-place; and its Market, which is on *Tuesdays*, is well resorted unto by *Grassers* and *Butchers*, from *London* and other parts, it being very considerable for *Cattle*.

Henley, or *Henley upon Thames*, as being thereon seated, over which it hath a fair Bridge; a large Town Corporate, governed by a *Warden* for its chief Magistrate, enjoyeth a considerable trade for *Maulting*, and much inhabited by *Bargmen* and *Watermen*, who are employed for the carrying of *Mault*, *Wood*, &c. to *London*; and in return, bring such commodities as they and the Neighbourhood have occasion of. Its Market is on *Thursdays*, which is very considerable for *Corn*, especially *Barly*, there being oft-times about 300 Cart-loads sold in one day.

RUTLAND, the smallest County in the Kingdom, making in circumference not above 40 miles; and although for quantity the least, yet for quality may be compared with the best, being of a very fertile Soil both for tillage and pasturage, especially about the Vale of *Catmose*. It is well clothed with *Wood*, watered with fresh *Streams*, is blest with a sweet *Air*, and hath more *Parks* (considering its extent) than any County in *England*.

This County is severed into five *Hundreds*, in which are 48 *Parishes*, and hath two *Market Towns*; viz.

Oakham, scituate in the rich and pleasant Valley of *Catmose*; and although not large, yet is the *Shire Town*, where the *Affizes* and *Sessions* are held; its Buildings are indifferent good, especially its *Church*, *Free School*, and *Hospital*; here is an old decayed *Castle*, which is now made use of for the *Affizes*. It hath a Market on *Saturdays*, which is indifferently well served with Provisions.

Uppingham,

Uppingham, highly seated; a neat compacted and well built Town, hath the accommodation of a *Free School*, and an *Hospital*; and its Market, which is on *Wednesdays*, is well resorted unto, and served with living *Cattle*, *Corn*, and *Provisions*.

SHROPSHIRE, being a frontier County to *Wales*, is well replenished with *Towns* and *Castles*, the better to over-awe the *Welshmen* in the bordering *Marches*; and divers Noblemen in this tract were called *Barons* of the *March*, and enjoyed in their Territories certain Priviledges, and held *Courts* for the administering of Justice.

This County is of a fertile Soil both for Tillage and Pasturage, abounding in *Wheat* and *Barly*, is well clothed with *Wood*, feedeth good store of *Cattle*, and in the bowels of the Earth are Mines of *Iron* and *Pit-Coal*. It is well watered with Rivers, as the *Tern*, *Chun*, *Rea*, *Teame*, *Roden*, and *Severn*, being the chief, which in a crooked passage severeth the Shire in the midst. It is very Hilly and Mountainous, especially towards the Southern and Western parts.

In this County are 170 *Parish Churches*, and hath for its Towns of chief note,

Shrewsbury, raised out of the ancient *Uriconium*, the Seat of the Princes of *Powis*, until forced thence by the *Saxons*. It is pleasantly seated on an easie Ascent, and on the banks of the *Severn*, which almost encompasses it. It is a place which for largeness, numbring 5 *Parish Churches* besides a *Chapel*, neatness of Buildings, both publick and private, largeness and variety of Streets, and populousness, may be set down in the rank of Cities. It is a Town of good strength, as well by Nature as Art, being fenced about with a strong Wall, defended by a *Castle*, *Bulwarks*, and other Fortifications. It is a place of a great resort, and well inhabited both by *English* and *Welsh*, and enjoyeth a great Trade for *Cloths*, *Cottons*, *Prizes*, and several other commodities; this place being the common Mart between *England* and *Middle Wales*. The Town enjoys large Immunities, keepeth Courts, sendeth its Representatives to Parliament, hath a large *Free School*, is governed by a *Major*, 24 *Aldermen*, 48 *Common Council-men*, a *Recorder*, *Town Clerk*, with other sub-Officers; and hath weekly 3 Markets, on *Wednesdays* for Provisions, on *Thursdays* for *Cottons*, &c. here sold in great abundance, and thence sent to *London*; and on *Saturdays* for *Cattle*, and all sorts of Provisions in great plenty.

Oswestry, so called from *Oswald* King of the *Northumbets*, who was here slain in a Battel, and cruelly torn in pieces by *Penda* the Pagan *Mercian* Prince. It is a Town Corporate, governed by two *Bailiffs* and *Burgesses*; and before the Mart for *Welsh Cottons* was hence removed to *Shrewsbury*, was of greater account than now it is; yet is it of some trade for *Flannels*, and its Market, which is on *Mondays*, is well resorted unto, and furnished with *Cattle* and *Provisions*.

Wenlock Magna, seated in the road from *Worcester* to *Shrewsbury*; a Town Corporate, governed by *Bailiffs* and *Burgesses*, hath the election of *Parliament men*, is of some note for its *Lime* and *Tobacco-pipes*, here made in great plenty; and hath a very good Market on *Mondays* for *Corn* and *Provisions*.

Bridgnorth, a large Town Corporate, governed by 2 *Bailiffs* and *Burgesses*, and hath the election of *Parliament men*. It is seated on the *Severn*, over which is a fair *Stone-bridge*, is well inhabited, containeth 2 *Parish Churches*, and hath a good Market for *Corn*, *Cattle*, and *Provisions*.

Ludlow, seated on the *Tem*, a Town more fair than ancient, being beautified with divers good Buildings, amongst which is the *Palace* of the President of the *Marches*. It is a large Town Corporate, governed by *Bailiffs* and *Burgesses*, hath the election of *Parliament men*, and hath a very great Market for *Corn*, *Cattle*, and *Provisions* on *Mondays*. The Town is strong, being defended by a *Wall* and *Castle*, is very populous and well inhabited, and is of

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chief

County of
Somerset de-
scribed.

chief note, for being the place where the Courts for the *Marches of Wales* are kept, for the easment of the *Welsh* and Neighbouring Inhabitants; and here Prince *Arthur* kept his Court.

SOMERSET, a large and wealthy County, and of a rich and fertile Soil both for Tillage and Pasturage; yet not without *Stony-hills*. It is exceeding populous, and well frequented, occasioned through its commodious Havens and Sea-port Towns, and is every where well watered with Rivers; as the *Seyern*, *Avon*, *Parnet*, *Frome*, *Brue*, *Izels*, &c. which with the Sea plentifully serveth the Inhabitants with excellent *Fish*. As to the bounds, extent, and division of the Shire into *Hundreds*, see the Table.

This County hath been the Theater of divers bloody Battles; for instance, at *Pen*, near *Cadbury*, *Edmond*, surnamed *Iron-sides*, gave the *Danes* a notable foil in his pursuit of *Canutus*, the then Usurper of the *English Crown*. Not far from *Bridgwater*, *Ealstan*, Bishop of *Sherbourn*, gave a great overthrow to the *Danish* Camp. At *Cadbury* King *Arthur* obtained a great and memorable Victory against the *English Saxons*: And near this place *Keniwalsh*, a *West Saxon*, obtained the like Victory against the *Britains*, to their ever after dread of the *English Saxons*. And not far from *Banes-down* King *Elfred* gave the *Danes* such an overthrow, that constrained them to a submission, and caused *Godry* their King to be baptized, and was his God-father.

In this County are numbered 385 *Parish Churches*, and hath intercourse of Traffick with 30 *Market Towns*.

Bristol, a City part in this County, and the greatest part being in *Gloucestershire*, it is there treated of, and therefore omitted here.

Bath, seated on the *Avon*, over which it hath a fair *Stone-bridge*, and in a low and small Plain, which is encircled with Hills, out of which issue forth several Springs, which pay their Tribute to this City. It is a City of great Antiquity, as doth appear by the many *Roman Inscriptions*, and *Images* commonly found in the Walls which encompass it; and where the *Abby* Stander was a Temple consecrated to *Minerva*, the Goddess of *Fountains* and *Baths*. It is a fair and neat City, replenished with well-built Houses, for Divine worship hath at present but one *Parish Church* besides its *Abby* or *Cathedral*, a superb Building. It is governed by a *Major*, *Aldermen*, *Common Council*, with other sub-Officers, enjoyeth several Immunities, sendeth its Representatives to Parliament, and hath two Markets weekly, on *Wednesdays* and *Saturdays*, which are well served with Corn and Provisions; it enjoys a good trade for its *Clothing* here made, and is a place well inhabited and resorted unto, and the rather for its *Medicinal Baths*, for the curing of several diseases in the body of Man. Of these *Baths* there are four, and the Waters, as to heat, is of a different temperature: The *Croß-Bath*, which is of a temperate heat, is enclosed with a Wall, and about the sides are placed 12 Seats of *Stone*. The second is of a much hotter temperature, and therefore called the *Hot Bath*: Adjoyning to these *Baths* is a *Spittle-house*, for the relief of poor diseased people. The third and fourth (as joyned together) are the greatest and best, being seated near the *Abby*, and called the *King and Queens Baths*; they are enclosed with Walls, and have 32 Seats made of *Arched-work*, and so ordered that Men and Women sit apart.

Wells, seated at the foot of a Hill, so called from the *Springs* and *Wells* there springing up; a small City, but well inhabited, and of a good account, being dignified with an *Episcopal See*, under whose Jurisdiction is that of *Bath*. It is garnished with fair and stately Buildings, both publick and private, as its *Cathedral*, dedicated to *St. Andrew*, a beautiful *Pile* of building; the *Bishops-Palace*, adjoyning to the *Cathedral*, built *Castle-wise*; then the *Prebendaries Houses*, and the *Market-house*, sustained by Pillars. It is governed by a *Major*, 7 *Masters*, 16 *Burgesses*, a *Recorder*, *Town Clerk*, &c. enjoyeth several Immunities, sends *Burgesses* to Parliament, and hath weekly 2 Markets, viz. on *Wednesdays* and *Saturdays*, which are well served with Provisions.

Bath.

wells.

Pensford, seated on the River *Chue*, near its falling into the *Avon*; a Town of good account, and much inhabited by *Hatters* and *Bakers*. It hath a Market on *Tuesdays*, which is well served with Corn and Provisions.

Glaassenbury, seated near the *Tor*; a good Town and hath a Market on *Tuesdays*, which is well served with Corn, *Fowl*, *Fish*, and other Provisions. This place is of note for its once famous and stately *Abby* of *Glaassenbury*, where (as 'tis reported) the Body of *Joseph* or *Arimathea*, whom *Philip* the Apostle of the *Gauls* sent into *Britain* to preach the Gospel of Christ, lieth interr'd; and here King *Inas* built a fair and stately Church, and in the Church-yard was the Sepulchre of King *Arthur*.

Neat adjoyning, on a high and steep Hill is placed a Tower, now called *Glaassenbury-Tor*; which commandeth a great prospect round about, and serveth as a Land-mark to Sea-men; and on the top thereof the last *Abbot* was hanged by command of King *Henry* the Eighth.

Bruton, seated on the River *Brew*; a well built and inhabited Town, of a good trade for *Clothing*, *Searges*, and *Maulting*, and hath a very great Market for Provisions, &c. on *Saturdays*. The Town is graced with a very beautiful Church, hath a Free School, founded by King *Edward* the Sixth, and a most goodly *Alms-house*, that hath rather the resemblance of a *Colledge* than an *Hospital*.

Evill, or *Teovell*, a *Borough Town*, governed by a *Port-Reve*, and keepeth Courts for the trial of Actions. It is seated on a River so called, and hath a very considerable Market on *Fridays* for Corn, *Cheefe*, *Hemp*, *Flax*, and Provisions in great plenty, taking its rise from the decay of *Ilchester*, near adjoyning.

Ilchester, a Town of great antiquity, and in former times of as great strength; for at the coming of the *Normans* it was so populous that it had in it 107 *Burgesses*, and numbered 16 *Parish Churches*; but at present it hath but two Churches. It is a *Town Corporate*, governed by a *Bailiff* and 12 *Burgesses*; hath the election of *Parliament men*, is the place where the County Goal is kept, and hath a pretty good Market on *Wednesdays*.

Taunton, pleasantly seated on the *Tone*, which is navigable for *Barges* within three miles of the Town, where it hath a fine Bridge. It is a very fine, neat, and well-built Town, graced with spacious Streets, containeth 2 *Parish Churches*; is well inhabited both by *Gentry* and *Tradesmen*, especially *Clothiers*, who drive a considerable Trade for *Searges* and *Clothing*, being esteemed the best Town in the County; and its Markets, on *Wednesdays* and *Saturdays*, are very great, and well provided with Corn, *Flesh*, *Fish*, and *Fowl*. It was formerly a *Major Town*, but at present a *Bailiwick*.

Bridgwater, seated on a navigable River, over which it hath a fine *Stone-bridge*. It is a large, well frequented and inhabited *Borough Town*, hath the election of *Parliament men*; is governed by a *Major*, and other sub-Officers; was formerly a place of good account, having a *Castle* and an *Abby*. Its Market is on *Thursdays*, which is well served with Corn and Provisions, and in the Summer season with *Cattle*.

Mynehead, seated on the Sea-shoar; a *Borough Town*, electing *Parliament men*, hath a very good harbour for Ships of a considerable burthen to ride in, and is a place of some Trade, especially into *Ireland*; yet its Market is but small.

The County of *STAFFORD*, seated much about the midst of *England*, of a healthful Air, and different Soil, the Southern parts being generally barren, as *sandy*, *gravelly*, or *heathy*, except on the banks of the Rivers; yet by the Husbandmans pains in manuring it, it beareth good Corn; and the Northern parts are *hilly*, and full of great *Heaths* and *Moors*, and is made use of for feeding of *Cattle*: And although an Inland County, yet by reason of the many Rivers and Brooks it is plentifully furnished with excellent *Fish*. To speak of the Country in general, there are more *Heaths*, *Moors*, and *wast Ground*, than in any County in *England*, as to its bigness, inasmuch that

County of
Stafford.

you may go the whole length of the County, and see little but *Heaths* and *Moors*; but these are not without profit, as breeding store of *Sheep*, *Conies*, and *Deer*, as well as pleasure for the Gentleman, both for the *Hawk*, *Gun*, and *Hound*; and for *Parks* and *Warrens* few Counties doth exceed it. The Commodities that this Shire affordeth to others, are *Cattle*, *Sheep*, *Horses*, *Butter*, *Cheese*, *Wool*, *Bacon*, *Iron*, *Iron-ware*, chiefly *Nails*, *Alabaster*, &c.

The number of *Parishes* are 130, and hath 18 *Market Towns*, many of which are of considerable account.

Litchfield, a City and County of it self, seated in a pleasant Champaign Country, divided from the *Cathedral* and *Cloze*, but joyned together by two *Bridges* and *Causeys*. It is a City of great antiquity, formerly called *Licidfeld*, that is, the *Field of dead Bodies*, which name it had from the great number of *Christians* there slain in the *Dioclesian Persecution*: and here *Oswin*, King of the *Northumbers*, having vanquished the *Pagan Mercians*, erected a *Church*, and made it the Episcopal See of *Dun* the Bishop, which afterwards was made an *Archiepiscopal Pale* by Pope *Hadrian*, in the Reign of King *Offa*, which dignity expired with his life. This City is well built, is indifferent large, containing 3 *Parish Churches* besides its *Cathedral*, a beautiful and curious Structure, adjoining to which is the *Bishops Palace*, and the *Prebends-houses*: the Streets are paved and well ordered, and is a place much frequented by *Gentry*. It is governed by 2 *Bailiffs*, a *Sheriff*, (which are elected out of 24 *Burgesses*) a *Recorder*, *Town Clerk*, with sub-Officers, and amongst its Immunities sends *Burgesses* to Parliament. Its Markets are on *Tuesdays* and *Fridays*, which are plentifully served with Corn and Provisions.

Stafford, well seated on the River *Sowe* amongst rich Meadows; a fair Town, indifferent large, containing 2 *Parish Churches*, hath a *Free School*, and a fine square *Market-place*, in which the *Shire-Hall* is kept for the *Affizes* and *Sessions* of the County; the Streets are paved and well ordered, and its Houses well built; it is governed by a *Major* and *Burgesses*, hath a *Recorder*, *Town Clerk*, and 2 *Serjeants at Mace*. The Town enjoys large Immunities, sends *Burgesses* to Parliament, is well inhabited and frequented, and its Markets, which is on *Saturdays*, is well served with Corn, *Flesh*, and other Provisions.

New-Castle under Line, seated on a little Rivulet; a large *Town Corporate*, governed by a *Major*, *Bailiffs*, and *Burgesses*, hath a Court of *Record*, to hold plea in all *Personal Actions* under 40 *l.* and amongst its Immunities sends *Burgesses* to Parliament. It hath a great Market on *Mondays* for *Cattle*, some *Horses* and *Sheep*, with plenty of Provisions; and after *Low-Monday*, a Market (or rather a Fair) every Fortnight for some time.

Uttoxeter, pleasantly seated near the Banks of the *Dove* amongst excellent Pasture. The Town is not very well built, but pretty large, hath a well built *Market-place*; and its Market, which is on *Wednesdays*, is said to be one of the greatest in these parts of England for *Cattle*, *Sheep*, *Swine*, *Butter*, *Cheese*, *Corn*, and all Provisions.

Tamworth, seated on the Banks of the *Tame*, which divides the Town, one part being in this County and the other in *Warwickshire*. The Town at present is of good account (though not of that splendor as in former times) being incorporated, governed by *Bailiffs*, a *high Steward*, *under-Steward*, *Recorder*, and other sub-Officers, sends *Burgesses* to Parliament, and hath a Market on *Saturdays*, which is indifferent good for Corn and Provisions, and in the Spring time for *Cattle* and *Sheep*.

Walshall, seated on the top of a Hill; a well-built *Town Corporate*, governed by a *Major*, and other sub-Officers, hath a Court of *Record*, enjoyeth a good Trade for divers Manufactures made of *Iron*, as *Nails*, *Bridle-bits*, *Stirrups*, *Spurs*, and also *Bellows*, here made in great plenty; yet its Market, which is on *Tuesdays*, is not very great.

Wolver-

Wolverhampton, pleasantly seated on a Hill, beautified with reasonable well built Houses, and its Streets handfomly paved; is much frequented by *Gentry*, hath a neat *Collegiate Church*, and its Market, which is on *Wednesdays*, is very considerable for Corn, *Cattle*, and *Provisions*, being esteemed the second *Market Town* in the County.

SUFFOLK, a County of a various Soil, and consequently hath sundry growths and Manufactures; the Eastern parts all along the Coasts, and for 5 or 6 miles Inland are generally very bleak, but healthy, sandy, full of small Hills and Springs, and employed in Tillage for *Rye*, *Peas*, *Brank*, *Flemp*, and for *Sheep-walks*. The more Inland part, commonly called *High-Suffolk*, & the *Wood-lands*, is pretty level, close and dirty, and is made use of chiefly for *Doerries*, driving a great trade for their *Butter* and *Cheese*; and the parts about *Bury* are Champaign, and affordeth great store of grain of all sorts.

It is a County of a large extent, is well stored with *Parks*, watered with fresh Streams, and blest with a most healthful and sweet Air, which makes it to be so well inhabited by *Gentry*, and is traded unto by 27 *Market Towns*, and numbeth 575 *Parish Churches*.

Spoewich, seated by the Banks of the *Orwell*, near the place where its fresh Water and salt meet, which (with the Tide) gives it the convenience of a *Key*. 'Tis a place of great antiquity, and was once fenced about with a Wall or Rampier, which was thrown down by the *Danes*. It is at present a place of a large extent, numbring 12 *Parish Churches* besides *St. Georges Chapel*; and for its abundance of Streets, which are clean and neatly ordered, its populousness and good trade that its Inhabitants drive both by Sea and Land, it may be ranged in the number of Cities. It is a *Town Corporate*, well Priviledged, sends *Burgesses* to Parliament, and is governed by 2 *Bailiffs* chosen out of 12 *Port-men*, and 24 *Common Council*, also a *Recorder*, *Town Clerk*, and other sub-Officers. It is well served with Provisions, for besides its *Shambles* here are weekly 3 Markets, viz. on *Wednesdays* and *Fridays*, for *Fish* and *Butter*, and on *Saturdays* for Provisions of all sorts in great plenty. And this Town gave birth to *Cardinal Wolsey*, who here began a magnificent College, which still bears his name.

Bury, or *St. Edmonds-Bury*, so called from King *Edmond* the Martyr, here interr'd, who was shot to death at *Hoxon* by the *Danes*, for not renouncing the *Christian Faith*. This Town is very pleasantly seated, and in an Air so healthful, that makes it to be much inhabited and frequented by *Gentry*. It is a *Town Corporate*, governed by an *Alderman* for its chief Magistrate, besides a *Recorder*, and other sub-Officers, and sends its Representatives to Parliament. It is of a large extent, yet consisteth but of two *Parish Churches*, hath well built Houses; its *Market-bill*, *Fair-field*, and *Corn-Cross*, are spacious and handfom, but its Streets are ill paved, chiefly occasioned by the heavy Carriages which come to its Markets on *Wednesdays*, which are much resorted unto, being the chief *Market Town* in the County for Grain, and is also well furnished with fresh *Fish*, *Pigeons*, wild *Fowl*, and most sorts of Provisions. This Town was famous for its *Abbey*, which for fairness and Prerogatives exceeded all others in England. Here is kept the *Quarter Sessions* for the liberty of *St. Edmond*; and in the *Abbey-yard* stands the *Shire-house*, where the *Affizes* are ordinarily held for the County.

New-Market, composed of a well built Street; a great thorough-fare Town, full of *Inns*; it consists of two *Parish Churches*, the one in this County and the other in *Cambridgeshire*; but its *Market-place* and *Street* is wholly in *Suffolk*. Its Market is on *Tuesdays*, which is well frequented and served with *Fish*, wild *Fowl*, and other Provisions; and by reason of the situation of the Town near the spacious *Heath*, which bears its name, so commodious for *Horse-races*, and in a part of the Country so fit for *Field-sports*, it is much resorted unto by his Majesty, where he hath his *Palace*, and the *Nobility* and *Gentry*.

Mildenhall.

County of Suffolk described.

Spwichi.

Bury.

Newmarket.

Mildenhall.

Mildenhall, seated on a branch of the *Ouse*; a large *Market Town*, graced with a fair *Church*, with a tall *Steeple*, and very populous, having distant Streets called *Rows* (as *Beck-row*, *How-row*, &c.) to the *Fenward* belonging to it, as big as some little Towns. It hath a well frequented Market (especially for *Fish* and *wild Fowl*) on *Fridays*.

Sudbury.

Sudbury, seated on the *Stower*, over which it hath a fair Bridge leading into *Essex*; an ancient, good large Town, containing 3 *Parish Churches*, and by reason of its trade of *Clothing* is well frequented. It is a *Borough Town*, electing *Parliament men*, and is governed by a *Major*, 7 *Aldermen*, 24 *Burgesses*, and other sub-Officers. Its Market, which is on *Saturdays*, is well resorted unto.

Hadhleigh.

Hadhleigh, a large *Town Corporate*, governed by a *Major*, *Aldermen*, *Council*, &c. hath the accommodation of two Markets weekly, viz. on *Mondays*, very considerable for all Provisions, especially *Meat*; and a smaller on *Saturdays*. It is graced with a sumptuous *Church*, was a place of great Trade in former times for *Clothings*; but at present hath lost much of its trade for *Turkey-ware*, as also for *Bays* and *Says*.

Stow-Market.

Stow-Market, seated in the center of the County, and between the branches of the *Cypp* or *Orwell*; a large and beautiful Town, graced with a spacious *Church*, on whose *Steeple* is a lofty *Pinacle*, not easie to be parallel'd. It hath a Market on *Thursdays*, which is well served with *Provisions* and *Retail-ware*; and the grand Trade of the Town is now in *Tummeys*, and other *Norwich-Stuffs*, being the only Town in the County considerable for that employment.

Woodbridge.

Woodbridge, a large Town, watered with several fresh Springs, having a pleasant prospect down the *Channel*, chiefly at High-water, being about 6 miles from the Main; a Town of good Traffick by *Sea* and *Land*; it is well enough built, excepting the lowness of the oldest Houses, and part of the Streets are well paved; it hath a fair *Church*, in which are several Monuments. Its Market, which is on *Wednesdays*, is of considerable resort, and well traded unto for its Commodities, viz. *Pouldrains*, *Sack-cloth*, *Plank*, *Butter*, *Cheese*, but chiefly for its *Hemp*. As to its *Sea-trade*, they have several Vessels both great and small, which are employed by them, and have here 4 or 5 Docks for the building of *Ships*.

Aldborough.

Aldborough, a *Coast Town*, pleasantly seated in a *Dale*; a large, long, and plain built Town, composed of two or three Streets of low Houses, all in a row. At a small distance from this Town is *Staugbden*, where they have a commodious Key, with *Ware-houses*, or *Fish-houses*, the only employment of the Town being for *Fish*, having great conveniences for drying their *North-Sea Fish*; in which Fishing-trade, with a little in the Coal-trade, they employ several Vessels, but not so many as formerly. It is a *Town Corporate*, governed by two *Bailiffs*, 10 *Capital Burgesses*, with 24 Inferiour, enjoyeth ancient Privileges, and sends its Representatives to Parliament. For their defence *Sea-wards*, they have about 20 great Guns planted. Its Market is on *Saturdays*, which is but small.

Dunwich.

Dunwich, an ancient *Town Corporate*, sending *Burgesses* to Parliament, and is governed by two *Bailiffs*, and other sub-Officers, and hath a small Market on *Saturdays*. It is a Town of great antiquity, being in the year 640 made an *Episcopal See* by *Felix the Burgundian*, in the reign of *William the Conquerour*; it contained 236 *Burgesses*, had a *Mint*, and its Inhabitants were rich; but through the removal of its *Episcopal See*, and the encroachment of the *Sea*, which hath swallowed up a great part of it, and decay of its Shipping and Trade; it is rather the Remains of a Town, than one.

Bungay.

Bungay, sufficiently watered by the *Waveney*, which severeth it from *Norfolk*. It is a good large Town, containing two *Parish Churches*, one of which is fair; and between both, in the midst of the Town, is to be seen the Ruins of a famous *Nunnery*. Its Market is on *Thursdays*, which is great, and well resorted unto, especially by those of *Norfolk*.

Beckley,

Beckley.

Beckley, seated also on the *Waveney*; a very large Town, having a considerable, much frequented, and well served Market on *Saturdays*, and hath a Passage-trade by Water to *Tarmouth*; the Town is but plain built, having several Thatched Houses, but graced with a fair *Church*, and a bulky tall *Steeple*, on a Hill.

SURREY, a County of a different Soil, not over fertil, (especially in the midst) yet the parts near the *Thames*, which is plain and Champaign, is grateful to the Husbandman; and the parts called *Holmesdale*, by reason of the aspiring *Hills*, *Rivers*, *Parks*, *Meadows*, *Groves*, and *Fields*, is a place of great delight. The Air is very healthful. It is garnished with the Seats of several Gentlemen, and is better stored with Game than Grain.

Here are seated 140 *Parish Churches*, and hath the accommodation of 9 *Market Towns*.

Southwark, on the *Borough* of *Southwark*, on the South-side of the *Thames* opposite to the City of *London*, to which it is joyned by a stately *Stone-bridge*, and is a member thereof, being annexed by *King Edward the Sixth*; but doth still enjoy several of its ancient Privileges, as electing *Burgesses*, holding of *Courts* within themselves, &c. It is a place, which for largeness of good Buildings, and quantities of Inhabitants, may be ranged with Cities; enjoying a good Trade, and is well resorted unto.

Croydon, seated low, near the Spring-head of the River *Wandle*, and in a manner begirt with aspiring Hills, which for the most part are well clothed with Wood, of which great store of *Charcoal* is made, for which this place is of note. It is a large Town, dignified with the Seat of the Archbishop of *Canterbury*, is beautified with a large and fair *Church*, hath an *Hospital* for the relief of Poor people, and a *Free-School* for the Education of Youth. The Town is large, its Houses well built, and its Market, which is on *Saturdays*, is considerable, and well served with Corn and Provisions.

From this Town to *Farnham* runneth the Downs, called *Banstead Downs*, which affordeth great diversion for *Hawking*, *Hunting*, and *Horse-Races*.

Kingston, a large and ancient *Town Corporate*, enjoying large Immunities, and is of chief note for being the place where (upon a Stage in the open Market-place) stood the Chair of Majesty, where *Ethelstan*, *Ethelred*, and *Edwin*, were Crowned Kings, and received their *Imperial Scepters*; from whence 'tis said the Town took its name, being before called *Moriford*. It is pleasantly seated on the Banks of the *Thames*, over which it hath a fair Bridge which leadeth to *Kingstonwick* in *Middlesex*, about a mile from *Hampton Court*, the Palace of his Majesty. Its Houses are well built, and hath several Inns and Taverns; it is the usual place for the *Affizes*, and its Market on *Sundays* is very considerable for Corn and Provisions.

Reigate, seated in the Vale of *Holmesdale*, of note for its bloody Battles here fought against the *Danes* in which they were vanquished; and also for its ancient, but ruined *Castley* where (in the midst of a large Court) there is a Vault of a great depth and length, at the end of which is a spacious Room, where (according to report) the *Barons* met in Council, in their War against *King John*. Here to *Fullers Earth* dug up in great plenty. It is a large *Borough Town*, which sends *Burgesses* to Parliament, and hath a very considerable Market on *Tuesdays*, being well served with Corn and Provisions.

Not far from this Town are *Blechingley* and *Gatton*, two ancient *Borough Towns*, which electeth *Parliament men*, once places of good account, especially *Gatton*.

Guilford, no less pleasantly than commodiously seated on the River *Wey*, which is navigable for *Barges*, very commodious to the Inhabitants for the conveyance of their Goods by water to *London*. It is an ancient *Borough Town*, governed by a *Major*, and other sub-Officers, hath the election of *Parliament men*, and was a place of a larger extent when the *English-Saxon* Kings had their Palace here, than now it is; yet is it a fair, neat, well built, and large

County of Surrey described.

Southwark.

Croydon.

Kingston.

Reigate.

Guilford.

large Town, containing three *Parish Churches*, one of which is a fair Structure. It is a place well inhabited and frequented, where the *Affizes* are oft kept; and as seated on a High-road, is well furnished with *Inns* and *Taverns* for the reception of Travellers; and its Market, which is on *Saturdays*, is of good Account, and well served with Corn and Provisions.

Farnham, said to be so called from the great store of *Fern* here growing. It is a good Town, seated on the River *Wey*, of note for being the place where King *Elfred* (with a small Power) subdued the *Danes* with a great slaughter; and for its spacious *Castle*, highly seated. It hath a great Market on *Saturdays* for all Provisions, but chiefly *Oats* and *Barley*.

SUSSEX, a large County, in form long and narrow, which, with its extent, bounds, division into *Rapes*, situation, &c. may appear by the *Table*. The *Air*, though clouded with Mists and thick Vapours, which arise from the *Sea*, yet is it good and healthful. It is well watered with Rivers, which fall into the *Sea*, which watheth its Southern parts; and although its *Sea-Coast* is of so large an extent, yet it is but thin of Harbours, and those not very good, being dangerous for entrance by reason of its *Recks* and *Shelves*.

The Soil is fertile: the *Sea-Coast* called the *Downs* is hilly, but very pleasant, and feedeth good store of Cattle. The North-part is overshadowed with Woods and Groves, where (in times past) was that famous Wood *Andradswald*, being about 120 miles in length, and 20 in breadth; and in these parts are many *Iron-Mines*.

The Commodities that this County affordeth, are *Iron* unwrought, and wrought into *Guns*, &c. *Corn*, *Cattle*, *Sheep*, *Wool*, and *Wood*.

This County is severed into 6 *Rapes*, all which traverse the *Shire*, and have each of them their particular *River*, *Forest*, and *Castle*; and in these *Rapes* are 65 *Hundreds*, in which are numbred 312 *Parish Churches*; and is traded unto by 16 *Market Towns*.

In *Chichester Rape* are 7 *Hundreds*, and its chief places are, *Chichester*, seated on the Banks of the *Levant*, which at a small distance falleth into the *Sea*. It is an indifferent large City, containing 5 or 6 *Parish Churches* besides its *Cathedral*; it is graced with good Buildings and spacious Streets, especially the 4 which lead from the 4 Gates of its Wall, and cross one another at the *Market-place*, which is a fair *Stone-Building*, sustained with *Stone-Pillars*. It is dignified with an *Episcopal See*, and Seat of a *Bishop*. It is a City endowed with many Priviledges, electeth *Parliament men*, is governed by a *Major*, *Aldermen*, *Recorder*, with sub-Officers; is a place of pretty good Trade, and its Markets, on *Wednesdays* and *Saturdays*, are well provided with *Corn*, *Cattle*, and all sorts of Provisions, both *Flesh*, *Fish*, and *Fowl*.

Nigh unto this City is *Selfey-Isle*, or rather a *Peninsula*, as being almost encompassed with the *Sea* and its Arms and Branches; at present of chief note for its *Cockles* and *Lobsters*, here taken in great plenty; but in former time was of note for its City so called, now devoured by the *Sea*, where there was an *Episcopal See*, which afterwards was removed to *Chichester*.

Arundel, pleasantly seated near a *Forest* so called, and on the Banks of the *Arum*, over which it hath a Bridge. It is an ancient *Borough Town*, governed by a *Major*, and sub-Officers, and amongst its Immunities sends *Burgesses* to *Parliament*; it was once of note for its ancient and strong *Castle*, which flourished in the time of the *Saxon Empire*. The Town is indifferent large, and its Houses well built, and hath a Market.

Horsb. *Horsb.*, seated near *St. Leonards Forest*, said to be so called from *Horsa*, Brother to *Hengist*, who were the first Leaders of the *English Saxons* into this Isle. It is a large *Borough Town*, governed by *Bailiffs*, sends *Burgesses* to *Parliament*, is the place where the *County Goal* is kept, as also the *Affizes*; and hath a very great Market on *Saturdays* for *Corn* and all sorts of Provisions, especially *Fowl*, which is bought up by *London Haglers*.

New

New Shorham, seated on an Arm of the *Sea*, which renders it to be a place of some Trade, and would be more, had it but a good harbour for Ships. It is a *Town Corporate*, governed by a *Constable* and *Burgesses*, electeth *Parliament men*, but hath not the benefit of a Market.

Lewes, scituate on the banks of the *Arun*; a *Town* of good antiquity, where King *Albertain* appointed the Mintage of his Money. It is a *Town Corporate*, governed by 2 *Constables*, enjoys several Immunities, electeth *Parliament men*, and hath a very good Market for *Corn* and Provisions on *Saturdays*. This *Town* for fairness of Buildings and Streets, populousness of Inhabitants, both of *Gentry* and *Tradesmen*, and largeness, numbring 6 *Parish Churches*, and having large *Suburbs*, may be esteemed one of the best Towns in the County.

At the entrance of the River *Arun* into the *Sea*, is *New-haven*, of late made a pretty secure Harbour for Ships, which hither put in in Foul weather, which these *Seas* are subject unto.

East-Grinstead, seated on an Eminence; a small *Borough Town* on the confines of the County towards *Surrey*, is graced with a fair *Church*, hath the election of *Parliament men*, is governed by a *Bailiff* and *Burgesses*, is the place where the *Affizes* are often held, and hath a good Market on *Thursdays*.

Winchelsey, of good antiquity, and once of far greater account than now it is, and that occasioned by the *Seas* unkindness in forsaking it; yet doth it still enjoy its Priviledges, as keeping of *Courts*, in being a Member of one of the *Cinque-Ports*, in sending *Burgesses* to *Parliament*, and by being governed by a *Major*, (who is Lord of *Tarmouth* for the *Fishing-Trade*) and *Jurats*. The Town is seated on a Rock or sandy Cliff, and on an Inlet of the *Sea*, where it makes 4 *Cataracts*, and were its Haven not choaked up it would be a place of Trade. It was formerly a large Town, numbring 18 *Parish Churches*, which are all reduced to ruin except one, and its Buildings also wasted and ruinous for want of Inhabitants, so that its Market is now disused.

Rye, one of the *Cinque-Port Towns*, which began to flourish upon the decay of *Winchelsey*, being walled about (where the Cliffs defend it not) in the Reign of King *Edward the Third*. It is at present a fair and well-built Town, with paved Streets; is well inhabited and frequented, chiefly by *Fisher-men*, being of note for its excellent *Herrings* here taken, and for being the ready Port-Town to *Normandy*. It is governed by a *Major* and *Jurats*, hath a commodious Haven, and hath weekly 2 Markets, viz. on *Wednesdays* and *Saturdays*, which are very well served with *Corn* and Provisions.

Hastings, of good antiquity, being incorporated, governed by a *Major* and *Jurats*, is one of the *Cinque-Ports*, enjoys large Immunities, and is of note for being the place where *William the Conquerour* set up his Fortrefs at his Landing at *Balver-hill*, not far distant, where he caused his Fleet to be burnt. It is a large Town, containing 2 *Parish Churches*, chiefly composed of as many Streets, in each of which there being a *Church*, and its Markets on *Wednesdays* and *Saturdays* are well resorted unto, and served with *Corn* and Provisions, especially *Fish*, which is here had in great plenty. As to the situation of this Town, it is couched between a high Cliff *Sea-wards*, and as high a Hill *Land-wards*.

The County of *WARWICK*, seated (as it were) in the midst or heart of the Kingdom, and participates with her in the best, both for richness of Soil, pureness of Air, and pleasure to its Inhabitants.

It may be divided into two parts, the one called *Feldon*, and the other *Woodland*, and these are in a manner separated by the River *Avon*, which in a crooked passage runneth through the County. That called *Feldon* is more Champain, affording rich Meadows, feeding store of Cattle, and is exceeding grateful to the Husbandman in their Crops of *Corn*: That called *Woodland*, of old *Arden*, took its name from the great plenty of Wood, which is now much wasted by the *Iron-works*, and this part is more ungrateful to the Husbandman.

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It is severed into 5 Hundreds (in which are numbered 138 Parish Churches) and is traded unto by 17 Market Towns.

Coventry, well seated for an Inland City, being esteemed the chief place of Trade in these parts; a place very well inhabited and frequented, and the more for the great quantities of Cloaths here made and vended. It is a fair, neat, and large City, containing 3 Parish Churches, of which that of St. Michael and the Holy Trinity, are loftily built, and is beautified with good Buildings and well ordered Streets, and its Cross (now lately repaired) is composed of curious work, and delightful to behold. Here it was that Godiva, wife to Leofrick, Earl of the Mercians, for the purchasing the Citizens freedom, and to be eased from those heavy Taxes which he imposed upon them for some Offence, about Noon-day rode naked through the chief Streets of the City. It is a place which enjoyeth several Immunities, being a County incorporate of itself, having within its Liberties several Towns; is governed by a Major, 2 Sheriffs, and other sub-Officers; keepeth Courts for the hearing of Causes and trial of Felons, having a Goal for Offenders, and sendeth Burgeses to Parliament. It is a place well served with Commodities, and its Market on Fridays, is very great for Corn, Cattle, Provisions, &c.

Warwick, a Town of great antiquity, said to be built by Gurgunstur almost 400 years before the birth of Christ; and in the time of the Romans it was in a very flourishing condition, large and populous, where they kept a Garrison, which was a Band of Dalmatian Horsemen. It is at present a Town of good account, seated on a steep Rock, and washed on the River Avon, over which it hath a strong and well-built Stone-Bridge. It is indifferent large, containing 2 Parish Churches (besides several demolished;) its Houses are well built, its Streets well-ordered and large, hath a stately Market-house, enjoyeth a good Trade, chiefly for Mault, and is the place where the Assizes and general Sessions for the County are kept. It is governed by a Major, 12 Brethren, 24 Burgeses, a Recorder, with sub-Officers. Amongst its Immunities electeth Parliament men; and its Market, which is on Saturdays, is very great for Corn and Provisions.

Near unto this Town is *Guy-Cliff*, most pleasantly seated amongst Groves and fresh Streams, where *Guy of Warwick* is said to have built a Chapel; and after he had left off his exploits, here led an Hermetical life, and was here interr'd.

Stratford, seated on the Avon, over which it hath a fair Stone-Bridge, sustained by 14 Arches. It is a good large Town, having for Divine worship two Churches, is well inhabited, enjoyeth a considerable Trade for Mault here made, and hath a Market on Thursdays, which is very well served with Corn and Provisions.

Bromicham, seated very dry on the side of a Hill; it is a large and well built Town, very populous, much resorted unto, and enjoyeth a very great trade for Iron and Steel Wares and Tools here made; also for Saddles and Bridles, which find good vent at London, Ireland, and other parts; and its Market is on Thursdays, which is very considerable for living Cattle, Corn, Mault, and Provisions, besides the Manufactures of the Town.

At *Newnham-Regis* is a Spring, whose Water (if drunk with Salt) lootheneth; and if with Sugar, bindeth the Body; and is said to be very Sovereign against Ulcers, Imposthumes, and the Gout.

The County of *WESTMORELAND*, so called, as lying amongst Moors, and high Hills or Fells, generally of a barren Soil, and very Mountainous; but not without many fruitful Valleys both for Tillage and Pasturage; and is well watered with fresh Streams.

Here are several Meers and Lakes, as *Winder-Meer*, which is the greatest standing water in England; *Rydale-water*, *Ester-water*, *Gresmere-water*, *Kent-Meer*, *Olles-water*, *Brother-water*, *Hawse-water*, and others.

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This County is divided or severed into two Baronies, viz. *Kendale Barony*, which is divided into the Wards of *Kendale* and *Lonsdale*; and the other Barony, called the *Barony of Westmoreland*, is divided into *East-Ward* and *West-Ward*; and of these in order.

Kirby-Lonsdale, or the *Church-Town* in *Lonsdale*, seated on the *Lon*, over which it hath a large Stone-bridge, and in a rich Vale. It is a large and well built Town, beautified with a fair Church; a well inhabited and frequented Town both to Church and Market, esteemed the greatest in the County next to *Kendale*; and its Market on Thursdays is well served with Provisions, and traded unto for Cloth.

Kendale, or *Kirby-Kendale*; a very fair, large, well-built, inhabited and frequented Borough, and Market Town, which for good Buildings, largeness, neatness, and good Manufactures is the chief in the County. It is a place of considerable Trade, the people much addicting themselves to Traffick, not only in their old Manufacture of Cotton and coarse Woollen Cloth, but of late in Drugges, Serges, Hats, Worsted-Stockings, &c. so the much enriching the Town and adjacent parts. It is most pleasantly seated in a Valley, so called, amongst Hills, and on the River *Can* or *Kent*, over which it hath two fair Stone-bridges, besides one of Wood, which leadeth to the *Castle*, now ruinous. The Town is built in form of a Cross, and is beautified with a fair and large Church, sustained by five rows of Pillars, with several Apartments; near unto which is a Free-School, well endowed; and to this Church belongeth 12 Chapels of Ease. As to the Government of this Town, it is committed to the care of a Major, 12 Aldermen, 20 Common Council-men, a Recorder, Town Clerk, and two Attorneys, who attend their Sessions and Courts of Record. Here are belonging to this Town 7 Companies, viz. *Mercers*, *Shearmen*, *Cordwainers*, *Tanners*, *Glovers*, *Tailors*, and *Peewiters*, each having their Hall or place of meeting; and for the accommodation of its Inhabitants hath a very great Market for Corn, living Cattle, and Provisions, on Saturdays.

Apleby, of note for its situation and antiquity, being for the most part encircled with the River *Eden*; but so slenderly peopled with idle Inhabitants, and the Buildings so mean, although of late much amended, that were it not for the Assizes and Sessions here held, it would be little better than a Village. It is a very ancient Town Corporate, governed by a Major, and 12 Aldermen, with sub-Officers, enjoys large Immunities, sends Burgeses to Parliament, and is discharged from paying Toll in all places, except London and York. Here is an Hospital or Alms-house erected, and liberally endowed by the Lady *Clifford* for the relief of 13 decayed Widows, who are called the Mother and her 12 Sisters. The Market is here kept on Saturdays, which is well served with Corn and Provisions.

Kirby-Stevens, beautified with a fair Church, seated near the Hills towards *Torkshire*. It is a good and well known Town, which of late is much improved by the trade of making Stockings, and hath a good Market on Fridays.

At *Stainmore*, a great Hill, is a Cross said to be erected upon a Peace concluded between *William the Conquerour* and *Malcolme* King of the Scots, and that by the said Place each Kingdom should know their limits; and on this Stone-Cross which is called *Ree-Cross*, that is, the Cross of Kings, was engraven the Arms of the Kings, on the South-side those of England, and on the North those of Scotland.

WILT-SHIRE, an Inland County, no less fertile than delightful. Its Northern parts hath delectable Hills, well clothed with Woods and watered with fresh Streams, amongst which is the *Iss*, which soon becometh the chief of the Kingdom. Its Southern parts are more even, and exceeding fertile in Corn and Grass, feeding great flocks of Sheep; and are also well watered with the *Avon*, *Wilby*, and *Alder*; and the midst of the County is plain and level, bearing the name of *Salisbury-Plain*, which is a large tract of ground which feedeth good flocks of Sheep.

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In the midst of this County is a *Dike* called *Wansdyke*, which furneth many miles in length, and is a place of some wonder, being said to be made for the dividing the Kingdom of the *Mercians* from that of the *West-Saxons*; this being the place where they fought for the enlargement of their Dominions. And here it was that *Ina* the *West-Saxon* joyned Battle with *Geordred* the *Mercian*, whence both of them quitted the Field with equal loss.

This County is divided into 29 *Hundreds*, in which are seated 304 *Parish Churches*, and hath for the accommodation of the Inhabitants 20 *Market Towns*.

Salisbury.

Salisbury, a City of great antiquity, being the Seat of the *Romans*. It is commonly called *New-Sarum*, as raised out of the Old, which was seated on a great Eminence, being designed for Strength and War; yet honoured with an *Episcopal See*, and a fair *Cathedral*. This City of *New Sarum* is pleasantly seated on a River, whose Streams commodiously water its Streets, which are large and spacious. It is beautified with fair Buildings, and its *Minster or Cathedral* is a stately Structure, having as many Doors for entrance as Months in the year, as many Windows as Weeks, and as many Pillars (Great and small) as Days in the year; and its *Spire* proudly sheweth it self from a great distance, near unto which is the *Bishop's Palace*; then its *Town-Hall*, seated in a spacious *Market-Place*, is a fair Building. This City (amongst its Immunities) sends *Burgeses* to Parliament, is a place well inhabited and frequented, enjoyeth a good Trade, and its Markets, which are on *Tuesdays* and *Saturdays*, are very considerable for Corn and Provisions, and for living Cattle on *Fridays*.

This City is encompassed with open *Fields* and *Plains*, where (at about 8 miles distance) is that wonderful piece of work called *Stone-Henge*, composed of great and unwrought Stones, some being 28 foot high, and 7 broad, and so laid thwart one another that it is wonderful to behold. And these Stones are said to be thus raised by the *Britains*, as a Monumental Sepulchre of the Virtue and Manhood of *Ambrosius Aurelianus*, who took upon him the Imperial Purple-Robe of *Britain* in the declension of the *Roman Empire*, recovered his languishing Country, and by the aid of that warlike *Arthur* repelled the furious rage of the Enemy, vanquishing powerful Armies, and in the end, in the last Battle fought on this Plain, lost his life.

Wilton.

Wilton, well watered with the *Willey* and another River; a Town in former times of such great note that it was the chief in the County, and was dignified with an *Episcopal See*, had a Monastery and enjoyed great Immunities, but at present it is become a small, mean *Borough Town*, electing *Parliament men*, is the place where the *Knights* of the Shire are chosen, where the *Sheriff* keeps his Monthly *County-Courts*; yet hath but a small Market on *Fridays*.

Devizes.

Devizes, seated near *Blackmore-Forest*; a Town of greater note and strength in former times than at present, being defended by a powerful *Castle*; yet is it a large Town, being well inhabited and traded unto for divers Commodities, especially for *Mault*; It hath the election of *Parliament men*, and its Market, which is on *Thursdays*, is very considerable for *Horses*; Cattle of all sorts, *Corn*, *Provisions*, and divers other Country-commodities.

Chipnam.

Chipnam, seated on the *Avon*, a *Borough Town*, electing *Parliament men*, and hath a noted Market for Corn and Provisions on *Saturdays*.

Marlborough.

Marlborough, seated on the *Kenet* near *Savernake-Forest* and *Aldburn-Chofe*, and in a *Chalky Soil*, a Town of great note in former times, where there was a *Parliament held*, and a Law made for the suppressing of all Tumults called the Statute of *Marlborough*. And here was once a strong *Castle* belonging to *John* surnamed *Sans Terre*, who was after King of *England*. It is at present a good, large, and well built *Borough Town*, electing *Parliament men*, is governed by a *Major* and *Burgeses*, and hath a very considerable Market for *Corn*, *Mault*, *Provisions*, *Butter*, and especially *Cheese* on *Saturdays*.

Not far from this place are divers *Stones*, some of a vast bigness pitched up an end.

Swindon,

Swindon, seated near a rich Vale, and on the Summit of a Hill, a Town of no largeness, but its Houses are generally well built of Stone, and hath a considerable Market for fat Cattle on *Mondays*.

Malmesbury.

Malmesbury, pleasantly seated on the Banks of the *Avon*, which almost encircled it, over which it hath 6 *Bridges*. It is a Town of great antiquity, where *Maidulph* an *Arch-Bishop*, a man of great holiness and Learning, under a Hill in a solitary Grove built a *Cell* or little Monastery, and lived an *Ascetical* life, and where his Successor *Adelma* built a fair Monastery, which now present a good *Borough Town*, governed by a *Major* and *Aldermen*, enjoyeth several Immunities, sends *Burgeses* to Parliament, and hath a good Market for Corn and Provisions on *Saturdays*.

County of Worcester.

The County of **WORCESTER** is of a fertile Soil, both for *Grass* and *Pasturage*, bearing good Crops of *Corn*, and feeding store of Cattle. It is intersected with aspiring Hills, well clothed with Wood, as the *Malvern*, *Bredon*, *Woodbery*, *Aberleg*, &c. and through its Valleys run those many Rivers, which so plentifully water the County, as the *Severn*, *Avon*, *Salwarp*, &c.

This Shire hath such great abundance of *Fruits*, that even the *Hedge-grows* and *High-ways* are better therewith, whose Fruits are free to all *Passengers*, and here *Sider* and *Perry* is had in as great plenty, as *Beer* in *London*. Here are many *Salt-Pits* or *Wiches*, which afford a most excellent high prized *Salt* for the *Gentry's* Table, which for fineness, whiteness, and hardness, may match *Loaf-Sugar*.

This County is severed into 5 *Hundreds*, in which are seated 162 *Parishes*, and is traded unto by 11 *Market Towns*.

Worcester.

Worcester, no less pleasantly than commodiously seated on the *Severn*, over which it hath a fair *Stone-Bridge*, with a *Tower* upon it. It is a City of great antiquity, said to be built by the *Romans*, the better to secure themselves from the *Britains*, who were Masters of all beyond the *Severn*, and was held in good repute in the time of the *Danes* and *Saxons*; and although it hath received so many shocks of ill fortune by Fire and Sword, yet is it a place of good largeness, numbring 9 *Parish Churches*, besides *St. Michaels* and its *Cathedral*, a stately Structure, in whose *Quire* are several graceful Tombs. This City enjoyeth ample Immunities, electeth *Parliament men*, is dignified with the Sec of a *Bishop*, is governed by a *Major*, *Sheriff*, 6 *Aldermen*, 24 principal *Citizens*, with 48 less, called *Common-Council-men*, 2 *Chamberlains*, a *Recorder*, *Town Clerk*, with sub-Officers; is graced with good Buildings and well ordered Streets, is well inhabited, enjoyeth a good Trade, especially for *Clothings*, here made in great quantities, and its Markets on *Wednesdays*, *Fridays*, and *Saturdays*, are very considerable, especially that on *Saturdays* for living Cattle, *Corn*, *Flesh*, *Fish*, and all *Provisions*, which are here had at easie rates.

Evesholme.

Evesholme, seated on a Hill, arising from the River *Avon*, which almost encompasseth it, where it hath a *Stone-bridge*. This Town was of note for its *Abby*, founded by *Edwin*, by the helping-hand of King *Kenred* Son of *Wolpher* King of the *Mercians*. It is at present a large and well built *Major-Town*, esteemed the best in the County, next to *Worcester*, containing two or three *Parishes*, sends *Burgeses* to Parliament, is well inhabited and frequented, enjoyeth a good Trade, principally for *Stockings*; and its Market, which is on *Mondays*, is very considerable for *Corn*, *Cattle*, *Provisions*, and *Stockings*. This Town gives name to a Vale near adjoining, which for fertility of Soil may deservedly be called the *Granary* of these parts.

Droitwich.

Droitwich, seated on the River *Salwarp*, a pretty good *Bailiwick-Town*, but its Market (which is on *Fridays*) is but small. This Town is of great note for its *Salt-Pits* or *Wiches*, having three *Fountains* that afford great plenty of Water for the making of *Salt*, which is excellent white and good, for which here is drove a good Trade.

Sturbridge.

Sturbridge.

Sturbridge, seated on a Flat, and on the *Stower*, over which it hath a Bridge; it is a good and well-built Town, hath the accommodation of a good Free-School, with a Library, and its Market on *Fridays* is well furnished with Corn, Provisions, and Swine.

Kidderminster.

Kidderminster, seated under a Hill, and on the *Severn*, where the *Stower* loseth it self, dividing the Town in twain; an ancient *Bailiwick-Town*, beautified with a fair Church, hath well-built Houses, is well inhabited, and much traded unto for its Stuffs called *Kidderminster-Stuffs*; and its Market, which is on *Thursdays*, is considerable for Corn, Cattle, Provisions, and several Country-commodities.

Bewdley.

Bewdley, a *Bailiwick-Town*, which sends *Burgesses* to Parliament, pleasantly seated on the *Severn*, and near the Forest of *Wire*, which in former time was a place of great delight, and much resorted unto. It is a neat and well-built Town, enjoyeth a good Trade for Mault, Leather, and Caps, called *Bewdley-Caps*, here made; and hath a Market on *Saturdays*, chiefly considerable for *Barly*.

County of York described.

TORK-SHIRE, the largest County in England, being above 300 miles in compass; and although thus spacious, for the generality is indifferent fertile, yielding good plenty of Cattle, Corn, Fowl, and Fish; for if one part is stony, sandy, and barren, other parts make amends: and although there are great store of Heaths and Moors, which are barren ground, yet are they profitable to the Inhabitants for the feeding of Cattle.

In this County the Romans had several Stations; and here were abundance of Abbeys, Monasteries, and Religious Houses, many of which were of great note, eminency, and wealth.

The chief Manufactures of this Shire, are Stockings, Alum, Fett, Lime, Knives, Pins, &c. but above all Cloth in great plenty.

It is severed into three distinct parts, and called the *North-Riding*, the *East-Riding*, and the *West-Riding*; which said Ridings or Parts are subdivided into 26 Wapontacks, or Hundreds, viz. the *North* into Eleven, the *East* into Six, and the *West* into Nine; and in all these Wapontacks are numbered 363 Parish Churches, besides abundance of Chapels of Ease, by reason of the largeness of the Parishes, many of the Chapels being as large as Parishes in other parts of England.

The *North-Riding* of *Yorkshire* may not improperly be divided into *Richmondshire*; *Cleveland*, a fertile part; *North-Allerton*, and *Blackmore*, very Mountainous, Craggy, and Moorish. The chief places in this Riding are,

City of York.

York, which next to *London* claimeth the Priority of all others in the Kingdom; a place of great antiquity and fame, having its rise from the Romans, who had it in such great esteem, that *Severus* their Emperour had here his Palace, and here ended his days, and had those Funeral Rites solemnized on his Corps according to their custom. And here *Fl. Valerius Constantius*, surnamed *Chlorus*, bid adue to the World, and in his room his Son *Constantine* was here proclaimed Emperour. Nor did this City thus flourish only in the time of the Romans, but was of great repute in all succeeding Ages, and hath in all the revolutions and changes under the Saxons, Danes, and Normans, preserved its ancient lustre, and is at present a fair, large, and beautiful City, adorned with many splendid Buildings, both publick and private, is very populous, much resorted unto, and well inhabited by Gentry and wealthy Tradesmen, and numbred about 30 Parish Churches and Chapels, besides its Cathedral or Minster, a most stately Structure dedicated to *St. Peter*. Amongst its publick Buildings of note these may be taken notice of; The Bishops-Palace; its Chapter-House, a curious piece of Architecture; the Princes-House, called the *Mannor*; and the Courts of Judicature, held for the Neighbouring Marches, according to that of *Ludlow*. It is a City and County within it self, enjoyeth large Immunities, sendeth Burgesses to Parliament, is governed by a Lord Major, 12 Aldermen clad in Scarlet, 2 Sheriffs, 12 Common Council,

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8 Chamberlains, a Recorder, Town Clerk, Sword-Bearer, and Common Sergeant, with other sub-Officers. It is a place of great strength, being well fortified, and enclosed with a strong Wall, on which are many Turrets or Watch-houses, and hath for entrance 4 Gates and 5 Posterns. Its situation is no less pleasantly than commodiously seated on the *Ouse*, which severeth it in two parts, but joyned together by a fair Stone-bridge; and to conclude, its Markets on *Thursdays* and *Saturdays* are very considerable, and well served with Flesh, Fish, Fowl, &c. as are its Shambles on the Week-days with Provisions.

Malton, or *New-Malton*, seated on the *Derwent*, over which it hath a good Stone-bridge. It is composed of two Towns, the *New* and the *Old Malton*, and both containing 3 Parish Churches; it is a place well inhabited, and accommodated with good Inns, hath weekly two Markets, on *Tuesdays* and *Saturdays*, which is one of the best in the County for Horses, living Cattle, Provisions, and most Country-commodities, especially Utensils for Husbandry; and as a Borough Town (which is but meanly built) electeth Parliament men.

Pickering, or the Honour of *Pickering*, a pretty good Town, belonging to the Dutchy of *Lancaster*, hath a famous Old Castle (now ruinous) in which they keep their Courts for the hearing of Causes under 40 s. in the said Honour, which includeth several Villages, which (as it were) encompass it, so that the adjacent Country is called *Pickering-Lith*, the Forest of *Pickering*, and the Liberty of *Pickering*. Its Market, which is on *Mondays*, is well served with Corn and Provisions.

Scarborough, a place of great strength, as well by Nature as Art, being seated on a steep Rock, with such craggy Cliffs, that it is almost inaccessible, and beareth so into the Sea; that it is washed on all parts, except on the West, where it yieldeth access by a strait passage, Cliff, or Gullet, where it hath a strong Wall. On the top of this Rock is a very fair, green, and large Plain, containing about 60 Acres of ground, and hath a little Well of Fresh-water springing out of the Rock; and for its further defence hath a strong Castle, now made use of by his Majesty for a Garrison. This Town is not very large, but well built and inhabited, enjoyeth a good Trade, having a commodious Key, with several Vessels belonging to it, which are employed by them; and during the Herring-season for the Fishing Trade, they being plentifully taken on this Coast. This place is of note for its famous Spaw, much resorted unto, as well by Foreigners as the English. It is a Town Corporate, electing Parliament men, is governed by two Bailiffs, and a Common Council; and hath two Markets weekly, on *Thursdays*, which is of good account, and on *Saturdays*, which is but small.

Not far from this Town is *Robinhoods-Bay*, so called from *Robinhood*, that noted Robber in the Reign of King *Richard* the First; and here is found Fett, or black-Amber,

Whitby, well seated on the River *Esk*, at its influx into the Sea, over which it hath a Bridge. It is a well built Town, enjoyeth a considerable Trade, (especially for Alum and Butter, called *Whitby-Butter*) there belonging to it about 100 Sail of Vessels, having a Custom, and would be more considerable were its Peer finished; and its Market, which is on *Saturdays*, is very great, and well served with Flesh, Fish, Fowl, &c.

On this Coast is seated *Skenningrave*; a small Town, but well frequented by Fishermen: And near unto *Hunt-Cliff*, not far from the Shoar, at a Low-water, appear Rocks, about which the Seal-fish come in great Sholes, and lie sleeping and Sunning themselves in fair and warm weather; and (according to observation) whilst these Fish do thus sleep, there is one of them which watcheth as a Sentinel, and when any danger approacheth, they are awaked by its ringing it self into the Sea, and making a noise, and so escape.

North-Allerton, seated near the *Swale*; a large Borough Town, which electeth Parliament men, and hath a great Market on *Wednesdays*, for Horses, Cattle, Corn, and Provisions, and is a Town of a good Trade.

The

Richmondshire.

The other part of this Riding beareth the name of *Richmondshire*, so called from a *Castle* there seated. It lieth very high, and is Mountainous and Rocky; hath good Mines of *Lead*, *Copper*, and *Pit-Coal*; is interlaced with fertil Valleys. It containeth within its Jurisdiction 5 *Wapontacks*, and hath for its chief places,

Richmond.

Richmond, seated on the Northern Banks of the *Swale*, over which it hath a *Stone-bridge*. It is a large *Town Corporate*, containeth 2 *Parish Churches*, is begirt with a *Wall*, which hath 3 *Gates* for entrance, which leadeth into so many Suburbs; is fortified with a strong *Castle*, highly seated on a *Rock*; is graced with well-built Houses, many of which are of *Free-stone*, and its Streets are paved and well ordered. Its *Market-place*, which is well resorted unto, and plentifully furnished with *Cattle* and *Provisions*, on *Saturdays*, is very spacious. It is well inhabited by *Gentry* and *Tradesmen*, and enjoyeth a very good Trade for *Stockings* and *Woollen Knit-Caps* for *Sea-men*. It is governed by a *Major* and *Aldermen*, with sub-Officers, enjoyeth large Immunities, and hath a Court of *Record* for all Actions, without limitation of some for the said liberty.

The East parts of this Riding, lying on or near the *Sea-shoar* and the Banks of the *Derwent*, are of a good Soil and fertil; but the midst, called the *Wold*, is very hilly and barren. Its chief places are,

Hull.

Hull, or *Kingston upon Hull*, commodiously seated on the Mouth of the River *Hull*, at its influx into the *Humber*; a Town of no great antiquity, taking its rise from King *Edward the First*, where he made a *Haven* and a *Free-Burgh*, and granted to its Inhabitants (who were *Free Burgesses*) ample Immunities. It is at present a very large *Borough* and *Town Corporate* (though containing but 2 *Parish Churches*) graced with fair Buildings, and well ordered Streets, which are sufficiently furnished with *Shop-keepers*, one of which resembleth *Thames-street*, near the *Bridge* in *London*, where *Pitch*, *Tar*, *Cordage*, *Sails*, and other necessities for *Ships* are sold, and to which the *Ships* and *Vessels* come to lade and unlade their Goods, having a *Custom-House* and *Key*; and the commodiousness of the Town for *Shipping*, makes it to be a place well-inhabited, and much resorted unto by *Merchants*; this Town being inferior for Trade to none in *England*, next to *London* and *Bristol*. It is a place of exceeding great strength, being able to bid defiance both to a *Navv* and a *Land-Army*, and that by reason of its strong *Block-houses*, *Castles*, *VValls*, *Fortis*, *Trenches*; and the Inhabitants and Souldiers within it, being a considerable *Garrison* of his Majesties. It is governed by a *Major*, 12 *Aldermen*, a *Common Council*, and other sub-Officers; amongst its Priviledges, gives *Vote* in *Parliament* by its Representatives. It is very well served with *Provisions*, as well in its *Shambles* as in its *Market*, which is on *Saturday*.

In these *Seas* are taken abundance of *Herrings*, to the great profit of the Inhabitants.

Burlington.

Bridlington, or *Burlington*, a *Sea-Port Town*, seated on a *Creek* near *Flamborough-head* (a place well known to *Sea-men*) and hath a safe Road for *Ships* to ride in, and a very commodious *Key* for *Ships* to lade and unlade at, by reason of which it enjoyeth a good Trade; and its *Market*, which is on *Saturdays*, is well served with *Provisions* &c.

Beverly.

Beverley, seated on the River *Hull*, which gives passage into the *Humber* for *Boats* and *Barges*, for the conveyance of their Goods to and fro. It is a large and well-built *Borough* and *Town Corporate*, containing two *Parish Churches* besides its *Minster*; it enjoyeth large Immunities, electeth *Parliament men*, is governed by a *Major*, 12 *Aldermen*, with sub-Officers; is a place well inhabited by *Gentry* and *Tradesmen*; and its *Markets*, which are on *Thursdays* and *Saturdays*, are well served with *Provisions*.

Howden.

Howden, seated near the Rivers *Ouse* and *Derwent*; a good large Town, which gives name to a small Territory called *Howdenshir*, and hath a very great *Market* for *Cattle*, *Corn*, and *Provisions*, on *Saturdays*.

The

The *West Riding* is the largest of the three, is every where well watered with *Rivers*, and replenished with good *Towns*; the chief amongst which are,

Halifax, seated in a barren Soil, and on a steep descent of an *Hill*; a place of note, as well for being the Birth-place of *Johannes de Sacro Bosco*, the Inventor of the *Sphere*, as for its strict Law in the sudden beheading of such as are taken in the act of Theft. As for the largeness of the *Parish*, it containeth 11 *Chapels* of *Ease*, of which two are *Parish Chapels*; is very well inhabited, and drieth a great Trade for *Cloth* and other *Manufactures*. It is a very good Town, graced with *Stone-built Houses*, and well-ordered and paved Streets, and hath a considerable *Market* for *Corn* and *Provisions* on *Thursdays*.

Halifax.

Sheffield, seated on the *Don* or *Dune*; a place of chief note for the great quantity of *Smiths* there inhabiting (by reason of the many *Iron-Mines* in these parts) who drive a good Trade for all sorts of *Edge-Tools*, and other things of *Iron*, especially *Knives*, which bear the name of *Sheffield-Blades*. The Town is large, its Houses built of *Stone*, and hath a great *Market* on *Tuesdays* for several Commodities, especially *Corn*, which is much bought up for the supply of some parts of *Darbyshire*, *Nottinghamshire*, and the *West of Yorkshire*.

Sheffield.

Rotherham, seated on the *Don*, over which it hath a fine *Stone-bridge*; a well built Town, with *Stone-houses*, and hath a very great *Market* for *Cattle* and *Provisions* on *Mondays*.

Rotherham.

Tickhill, yet retaineth something of its ancient *Castle* and *Fortifications*, demolished in the late Wars. It hath a distinct *Liberty*, called the *Honour of Tickhill*, being part of the *Duchy of Lancaster*, and hath a *Market* on *Saturdays*.

Tickhill.

Doncaster, seated on the *Don*, and on the great Road to *London*; an ancient Town, of good Antiquity, once defended by a *Castle*, now reduced to ruins; and in *Anno 759* this Town suffered much, great part (with its *Cittadel*) being consumed with *Fire*; but was rebuilt with a fair *Church*, erected in the place where the *Cittadel* stood. It is a large, well-built and inhabited *Town Corporate*, governed by a *Major* and *Aldermen*, enjoyeth a good Trade, especially for *Stockings*, *Knit-Waistcoats*, *Petticoats*, and *Gloves*, and hath a very good *Market* for *Corn*, *Cattle*, and *Provisions*, on *Saturdays*.

Doncaster.

Selby, honoured in giving birth to King *Henry the First*, seated on the *Ouse*, which gives passage for small Vessels to *Tork*, which doth occasion it to be a Town of some Trade, and hath a good *Market* for *Provisions* and *Merchandise* on *Mondays*.

Selby.

Ponfract, very delightfully seated in a dry tract of ground; a neat *Town Corporate*, beautified with good Buildings, was once strengthened with a strong and stately *Castle*, which was demolished in the late Wars. It is governed by a *Major* and *Aldermen*, sends *Burgesses* to *Parliament*, and hath a very great *Market* for *Corn*, *Cattle*, *Provisions*, and divers *Country-commodities*, on *Saturdays*.

Ponfract.

Wakefield, seated in a large *Lordship* so called, having its *Steward*. It is a large Town, of good antiquity, beautified with well built *Stone-houses*; it is a place well known for its *Clothing* here made, and hath a great *Market* on *Thursdays* and *Fridays* for *Cloth*, *Corn*, *Provisions*, and divers *Country-commodities*.

Wakefield.

Leeds, seated on the *Aire*; an ancient Town, where the Kings had formerly their *Royal Palace*; and here *Oswey*, King of the *Northumbers*, put to flight *Penda the Mercian*. It is a large and well built *Town Corporate*, governed by a *Major* and *Aldermen*, with sub-Officers, electeth *Parliament men*, is very well inhabited, especially by wealthy *Clothiers*, who drive a great Trade for their *Cloth*; and hath two considerable *Markets*, on *Tuesdays* and *Saturdays*, which are well traded unto for *Corn*, *Provisions*, *Woollen-Cloth*, and divers good *Commodities*.

Leeds.

Z.

Knares-

Knaresborough.

Knaresborough, delightfully seated on the *Nidd*, and on a ragged rough Rock, on which is seated a Castle. It is a well-built *Town Corporate*, electing *Parliament men*, and hath a good Market for Corn and Provisions on *Wednesdays*.

Nigh unto this place, in a Moorish boggy-ground, riseth a Spring of *Vitrioline* tast and odour; and not far off is also a *Sulphur-Well*, which is good for several Diseases; here is also a dropping *petresying-Well*, which turns, *Wood*, *Moss*, &c. into *Stone*.

Rippon.

Rippon, seated between the *Tore* and a Branch thereof, over which are two Bridges. It is a place of good antiquity, and of much fame for its *Religious Houses*, but especially for its stately Monastery, built by *Wilfrid* Archbishop of *York*. It is at present a large and well-built *Town Corporate*, governed by a *Major* and *Aldermen*, hath the election of *Parliament men*; the Town is well inhabited by Gentry, and its Market, which is on *Thursdays*, is very great for *Cattle*, *Corn*, *Provisions*, and chiefly for *Wool*, which is much bought up by the *Clothiers* of *Leeds*. This Town is beautified with a very fine *Cathedral Church* with a lofty Spire-Steeple; and in this Church was *Sr. Wilfrids Needle*, a place famous in our Fore-fathers days, being a narrow Hole in the close Vaulted-room under ground; in which place (as 'tis reported, but not Recorded for Truth) *Womens Honesty* was used to be tried; for, according to the story, those that were Chast could easily pass through; but the kind-hearted Souls were (by an unknown means) held fast, and could not pass through.

W A L E S.



W A L E S.

THE Island of great Britain, in ancient time, was severed into three Parts; the first, fairest, and greatest, contained all within the *French Seas*, the Rivers of *Severn*, *Dee*, and *Humber*, and was called *Lhwyger*, which name in *Welsh* it still retaineth; and in *English*, *England*. The second took up all the Land Northwards, from the *Humber* to the *Orkney Isles*, and was called *Mare Caledonium*, or *Dracaledonium*, and now *Scotland*. And the third lying between the *Irish Seas*, the Rivers of *Severn* and *Dee*, was anciently called *Cambria*, and now *Wales*; to which the *Britains* being outed of their Country, were forced to retire, and there fortified themselves.

This Country of *Wales* is bounded on all sides by the *Sea*, except towards *England*, from which it is severed by the River *Dee*, and a Line drawn to the River *Wye*; but anciently it was extended to the River *Severn* Eastward, for *Offa* King of the *Mercians* forced them to quit the Plain Countries beyond that River (which now is called the *Marches of Wales*), and to betake themselves to the *Mountains*, which he caused to be separated from *England* by a great Ditch, called *Offa's Dike*; in *Welsh*, *Claudh Offa*; in many places yet to be seen; which *Dike* beginneth at the influx of the *Wye* into the *Severn*, and reacheth unto *Chester*, which is about 84 miles; where the *Dee* disburthens it self into the *Sea*. And over this *Dike* (by a Law made by *Harald*) no *Welshman* was permitted to pass with a Weapon, upon pain of losing his Right hand.

The whole Country is *Mountainous* and *Barren*, yet affordeth several good Commodities, and is not without many fertile Valleys, which bear good *Corn*, and breed great abundance of small *Cattle*, with which they furnish *England*, as also with *Butter*, *Cheese*, *Woollen-Cloths*, called *Welsh-Frizes*, *Cottons*, *Bays*, *Herrings*, both White and Red, *Calve-skins*, *Hides*, *Hony*, *Wax*, &c. and the Country is well stored with Quarries of *Free-stone* for building, and *Mill-stones*; as also hath Mines of *Lead*, *Lead-Oar*, *Coals*, and some of *Silver* and *Tin*. And these Commodities are generally brought to *Shrewsbury*, *Osweestre*, *Bristol*, *Worcester*, and other adjacent parts, and thence dispersed into *England*.

About the year of Christ 870, *Rodericus Magnus*, King of *Wales*, divided this Country into three Regions, Territories, or *Talaiths*, which were so many Kingdoms, to wit, *Gwineth*, *Venedotia*, or *North-Wales*; and this part he gave to *Anarawd*, his eldest Son; *Debeubarth*, or *South-Wales*, which he gave to *Cadelh*, his second Son; and *Powis*, or *Powis-Land*, which he gave to *Mervin*, his third Son: and in each of these three Kingdoms he appointed a *Royal Palace*, as at *Aberffraw*, in the Isle of *Anglesey*, for *North-Wales*; at *Dynefar*, or *Dynevor-Castle*, not far from *Carmarthen*, for *South-Wales*; and at *Matravan*, in *Montgomery-shire*, for *Powis-Land*.

But at present, according to Act of Parliament, made in the Reign of King *Henry* the Eighth, it is severed into two Parts, to wit, *North-Wales* and *South-Wales*, both which have as it were devoured all *Powis-Land*; and in each of these parts there are 6 Counties; in the North, those of *Anglesey*, *Cuernarvon*, *Denbigh*, *Flint*, *Merioneth*, and *Montgomery*; and in the South, those of *Brecknock*, *Cardigan*, *Carmerden*, *Glamorgan*, *Pembroke*, and *Radnor*.

Z 2

Again,

The Bounds.

Very Mountainous and Barren.

Its Ancient division.

Present division.

Again, *Wales* (like unto *England*) is divided into four Circuits for the Administration of Justice; and then the first shall contain the Counties of *Denbigh*, *Flint*, and *Montgomery*; the second, those of *Brecknock*, *Glamorgan*, and *Radnor*; the third, those of *Cardigan*, *Carmarthen*, and *Pembroke*; and the fourth, those of *Anglesey*, *Caernarvon*, and *Merioneth*.
But to proceed to the description of these Counties, and first of *North-Wales*.

N O R T H W A L E S.

Isle of Anglesey.

The Island of *ANGLESET* is severed from *Caernarvon-shire* by a narrow Streight of the River *Menai*, and on all other parts it is washed with the *Irish Seas*. It was the ancient Seat of the *Druids*; and brought with no small difficulty under the *Roman Scepter* by *Julius Agricola*. It is so fertile, and abounding in all things, as *Corn*, *Cattle*, and *Provisions*, that the *Welsh* term it the *Mother of Wales*, supplying its defects; although for fight it seemeth dry, stony, and hilly. It produceth a sort of Stones called *Molares*; very fit and good for *Mill-stones*; and *Grind-stones*.

In this Isle were formerly seated 366 Towns and Villages, but at present but 74, and hath intercourse of Traffick with two *Market Towns*; and hath several good Ports and Harbours; as also divers *Ferries*, for the conveyance of Passengers to and fro. Its chief places are,

Beaumaris.

Beaumaris, seated on a Moorish ground, but commandeth a fair prospect into the *Sea*; where it hath a very good Harbour for *Ships*. It was built by King *Edward* the First, the better to secure his Conquest, who fortified it with a powerful Castle, now in good repair. It is a pretty good handfom Town Corporate, governed by a *Major*, *Recorder*, 2 *Bailiffs*, who are *Justices* of the *Peace*; and a *Common Council*, called *Burgesses*. It is the chief *Shire-Town*, where the *Affises* and *Sessions* are held, sends a *Burges* to *Parliament*, is indifferently well inhabited and frequented, as being the usual place for the reception of Passengers from *London* to *Ireland*, before their taking Shipping at *Holyhead*. It hath weekly two Markets, on *Wednesdays* and *Saturdays*, which are indifferently good.

Newburgh.

Newburgh, seated near *Brant River*, where it formeth a *Bay*, and falleth into *Menai River*; a small *Borough Town*, governed by a *Major*, 2 *Bailiffs*, and a *Recorder*, and hath a Market on *Tuesdays*.

County of Caernarvon described.

The County of *CAERNARVON*, before *Wales* was divided into *Shires*, bore the name of *Snowden-Forest* from the principal Hill therein seated, which is of a very great height and extent, and affordeth excellent sweet *Mutton*; on the top of this Hill floateth a *Meer*, and maketh a River, and falleth into the *Sea* at *Tratbe-Mawer*. It is a County of a sharp Air, very Mountainous; yet not unfertile, and feedeth good Herds of *Cattle*.

In this County are seated 68 *Parish Churches*, and hath six *Market Towns*;

Caernarvon.

Caernarvon, commodiously seated on the *Sea-shoar*, where it hath an excellent prospect into the Isle of *Anglesey*. It was a place of good account, where the Princes of *Wales* had their *Exchequer* and *Chancery* for *North-Wales*; and is a place of great strength as well by Nature as Art, being encompassed on all parts (except towards the East) with the *Sea* and two Rivers, and had a strong Castle, where, in a Tower thereof called *Eagle-Tower*, *Edward* the Second, the first Prince of *Wales* was born. It is a place of no great extent, having but one *Parish Church*; its Houses and Streets are well built and ordered, is well inhabited, enjoyeth several Immunities, sends a *Burges* to *Parliament*, is governed by the *Constable* of the Castle, who is ever *Major*, and hath for his assistance an *Alderman*, 2 *Bailiffs*, a *Town-Clerk*, with Sub-Officers; and its Market on *Saturdays*, is very good for *Corn* and *Provisions*.

Bangor,

Bangor, lowly seated on the *Sea-shoar*; a Town in Ancient time so large, that it was called *Bangor the Great*, and was defended by a powerful Castle, which long since was laid level to the ground. It is at present but a small City, or rather a Town, yet dignified with the See of a *Bishop*; its Cathedral is large and well built, its Houses indifferent good, is pretty well inhabited, is governed by the *Bishop's Steward*, who keepeth *Court*, *Leets* and *Courts-Baron* for the *Bishop*; and hath an indifferent good Market on *Wednesdays*.
High unto *Bangor* is *Penmaen-mawr*; that is, the *Great Stony-head*, being an exceeding high and steep Rock, which at High-Sea so hangeeth over, that it affordeth a very narrow and dangerous passage; but having passed this, and *Penmaen-bychan*, that is, the *Lesser Stony-head*, the Country openeth it self in a broad Plain as far as the River *Conwy*.

Penmaen-mawr.

Aberconwy.

Aberconwy, seated at the Mouth of the *Conwy*, raised out of the Ruins of the ancient *Canonium* of *Antonine*, being strongly fortified both with Walls and a Castle. It is a pretty good Town, governed by an *Alderman* and 2 *Bailiffs*, which for largeness and good Buildings, doth rather deserve the name of a City than a Town, especially were it thicker inhabited, and better resorted unto; yet its Market, which is on *Fridays*, is well served with *Provisions* and several Country-commodities.

Pulbely, seated on the *Sea-shoar*, and between two Rivers; a pretty large and indifferent well-built *Bailiwick Town*, which hath a good Market on *Wednesdays* for *Corn* and *Provisions*, and enjoyeth a good Trade by *Sea*.

Pulbely.

County of Denbigh described.

DENBIGH-SHIRE, a Country very Hilly; several of which are of so great a height, that they retain *Snow*, and the tops thereof in the *Summer* season are the Country-mans *Morning Almanack*, to denote a fair day by the rising of certain Vapours.

It is of a different Soil; the Western part being *Heathy*, is much inclined to sterility, and but thinly inhabited, except the part which lieth towards the *Sea*; the Eastern (beyond the Valley) is much more barren; and the middle, where it lieth flat, is a pleasant and fertile Vale, and well inhabited with *Gentry*.

Here are seated 57 *Parish Churches*, and is traded unto by four *Market Towns*.

Denbigh, seated on the hanging of a Rocky-Hill; and on a branch of the *Clwyd*; once a place of good strength, when fortified with a strong Wall, and an impregnable Castle. The Town is indifferent large, well built, inhabited by *Glovers* and *Tanners*, enjoyeth a good Trade, by some esteemed the best Town in *North-Wales*; is governed by 2 *Aldermen*, 2 *Bailiffs*, and 25 *Capital Burgesses*, with sub-Officers; electeth a *Parliament man*, and hath a good Market for *Corn*, *Cattle*, and *Provisions*, on *Wednesdays*.

Denbigh.

Ruthin, seated on the *Clwyd*, which washeth a rich Vale, of note for its once large and fair Castle. It is a large, well inhabited and frequented *Town Corporate*, governed by 2 *Aldermen* and *Burgesses*, hath a large *Hospital*, and a *Free School*, governed by a *Warden*; and hath a very considerable Market for *Corn* and *Provisions* on *Mondays*, which is esteemed the best in the Vale.

Ruthin.

Wrexham, seated in a good Soil, affordeth plenty of *Lead*, and on a small River which falleth into the *Dee*. It is an indifferent large, well-built and inhabited Town, graced with a fair Church, whose Steeple is not inferior to any in *England*; and hath two Markets weekly, viz. on *Mondays*, which is but small, and on *Thursdays*, which is very great for *Corn*, *Cattle*, and *Provisions*.

Wrexham.

In this County is *Llanfainan*, seated on the River *Aled*; a small Town, but of note for its Cave made in the side of a Rock or *Stony-hill*, wherein are 24 Seats, some bigger and some lesser, known by the name of *Arthur's Round-Table*; a place much frequented by *Shepherds* and *Headsmen*.

Llanfainan.

The

Flintshire described.

St. Winfrids-well.

Flint.

St. Asaph.

County of Merioneth described.

Harlech.

Bala.

The County of **FLINT** is not over Mountainous; and those that are being interlaced with fertile Valleys, affordeth plenty of Corn and Pasturage; it hath great abundance of *Hony*, but is very defective of *Wood* and *Fruit*. It is indifferently well watered, hath several safe Harbours for *Ships* to Ride and Anchor in; and this part of the County hath plenty of Mines of *Pit-Coal*, and the adjacent Mountains have store of *Lead-Ore*.

This Shire is famous for *St. Winfrids-Well*, not far from *Cajerwis*, in *English*; *Holy-Well*; a place of great note, and much resorted unto; as well by those to Bath in, as being esteemed very good for several Diseases; as by *Pilgrims*, out of their devotion in memory of that Christian Virgin *Winfrid*, who was there ravished by a young Lord or Prince of the Country; and to stop her Acclamations, cruelly slew her and cut off her Head; out of which place (according to Report) did immediately gush forth a *Spring*, which is of so rapid a Stream, that at a small distance it is able to drive a Mill. Over the Head of this *Spring* or *Well* there now standeth a *Chapel* built of *Free-Stone*, of curious workmanship; and in the *Chancel*, on the *Glass-window* is lively painted the History of *St. Winfrid*; of her life, and how her Head was cut off, and set on again by *St. Beuno*. In the Well there groweth *Moss*, of a most sweet and pleasant smell, which is said to be *St. Winfrids-hair*.

Here are seated 28 *Parishes*, and hath two *Market-Towns*. *Flint*, well seated on the *Dee*, of chief note for its now old and ruinous *Castle*; and although the *Shire-Town* is but small, and hath no *Market*; but at a *Borough-Town*, electeth *Parliament* men.

St. Asaph, seated on the *Elwy*, where it receiveth the *Clwyd*, over each of which there is a *Bridge*; a place of more fame for its antiquity, than largeness or beauty, being an ancient *Episcopal See*, founded by *Kentigern*, a *Scott*; Bishop of *Glasco*, in *Anno* 560, of which about 300 that were unlearned, employed their times in Husbandry within the limits of the said *Monastery*, and the rest to a Holy life. By this it may be judged their Bounds were exceeding large; and upon his return into *Scotland*, he ordained *Asaph* (a godly man) to be his Successor, from whom the Town or City took its name; which at present is not large, nor its Buildings very good, chiefly glorying in its *Cathedral*. It hath a small *Market* on *Saturdays*.

The County of **MERIONETH** is exceeding Mountainous and Rocky, very unpleasant, and for the generality much inclined to sterility, bearing but thin Crops of *Corn*; yet is found to feed good flocks of *Sheep*, and Herds of *Cattle*, from which the Inhabitants draw their chief Maintenance. It is observed, that these Mountains are of so great an height, that in many places two men may stand and discourse together, each upon a several Mountain, but must travel some miles before they can come to meet. It is well watered with *Rivers*; and is well provided with red *Deer*, *Fowl*, and *Fish*; and as this County is thus Mountainous and barren, so is it as thinly inhabited, numbring but 37 *Parishes*, and those but ordinary, and hath but three *Market-Towns*.

Harlech, seated on a Rock on the *Sea-shoar*; a small *Borough Town*, which is but thinly inhabited, nor its Houses over well built, although the chief of the County. It is governed by a *Major* for its chief Magistrate, sends a *Burgess* to *Parliament*, and hath a mean *Market*. This Town was once of a greater account for its strong and beautiful *Castle*, highly seated, commanding both Sea and Country adjoining; but was reduced to Ruins in the late unhappy Wars by the *Parliamentiers*, this being a Garrison of the Kings.

Bala, seated near *Pimble-Meer*, which is of a large extent, through which the *Dee* is said to run, but not to mingle with its water, which is proved for that the *Salmons*, plentifully taken in the *Dee*, are not found in this *Meer*; and likewise the Fish called *Gwyniaid*, much like unto *Whittings*, which is in as great plenty taken in this *Meer*, are never found in the *Dee*. This Town is Incorporated, enjoyeth some Immunities, is governed by *Bailiffs*, hath an indifferent *Market* on *Saturdays*; but the Town is mean and small.

MONT-

County of Montgomery described.

Montgomery.

Welch-Pool.

Llanvillling.

MONTGOMERY-SHIRE, very Hilly and Mountainous, but interlaced with fertile Valleys both for Tillage and Pasturage, and was in ancient time of note for its good breed of *Horses*.

Here are seated 47 *Parish Churches*, and is traded unto by 6 *Market-Towns*.

Montgomery, the Shire-Town, so called from *Roger de Montgomery*, Earl of *Shrewsbury*, the first builder thereof. It is well seated amongst rich grounds, and on an easie Ascent of a Hill; a place once fortified with a powerful *Castle*, and fenced about with a *Wall*, which was dismantled in the late Wars. It is an indifferent large *Town Corporate*, governed by *Bailiffs*, sends a *Burgess* to *Parliament*, and its *Market*, which is on *Thursdays*, is well resorted unto, and hath a good *Shambles*.

Welch-Pool, seated on the *Severn*, and in a rich Vale; the greatest and best Built *Town Corporate* in the County, governed by *Bailiffs*, is well inhabited, enjoyeth a very good Trade for *English* Commodities from *Bristol*, and its *Market* on *Mondays* is very considerable for *Cattle*, *Provisions*, and *Flannels*. Its *Castle*, called *Powis-Castle* (which within the compass of its Wall containeth two *Castles*), is of late a large and stately Pile of Building.

Llanvillling, situated in a Flat amongst the Hills, and between the *Cain* and the *Ebir*; it is a good Town, and hath a considerable *Market* for *Cattle*, *Corn*, *Wool*, and *Provisions*, on *Thursdays*.

Within three miles of this Town is *Mairavan-Castle*, sometimes the Royal Seat of the Princes of *Powis-Land*.

S O U T H - W A L E S.

PEMBROKE-SHIRE, called in *Welsh*, *Brechineh*, is said to take its name from one *Brechanus*, a Prince, who had a great Off-spring of Daughters, and all Saints. It is a County for the generality very Mountainous, some of which are exceeding high, especially *Monchdenys-Hill*, not far from *Brecknock*, which exalteth it self above the Clouds; and although thus Hilly yet is not without many large and fertile Plains and Valleys, both for *Corn* and feeding of *Cattle*; and the more by reason of the Rivers, *Uske* and *Wye*, which receive those many Streams that so plentifully water the County, and afford to the Inhabitants great abundance of Fish, especially *Salmon* and *Trouts*, in the *Wye*.

Here are seated 61 *Parish Churches*, and 4 *Market-Towns*.

Brecknock, seated at the meeting of the Rivers *Hodney* and *Uske*, over which it hath a fair *Stone-bridge*. It is a place of good antiquity, and at present a very large *Bailiwick Town*, containing 3 *Parish Churches*, one of which is a *Collegiate Church*; its Houses are well built, was once strengthened with a stately *Castle*, as also with a strong *Wall*, which gave entrance by 3 *Gates*. It is governed by 2 *Bailiffs*, 15 *Aldermen*, 2 *Chamberlains*, a *Town Clerk*, &c. amongst its Immunities sends a *Burgess* to *Parliament*; is a place well inhabited, and the rather as being the Shire-Town where the *Assizes* are held. It enjoyeth a good Trade for *Clothing*, and hath weekly two *Markets*, on *Wednesdays* and *Saturdays*, which are very well served with *Cattle*, *Corn*, and *Provisions*.

About two miles from this Town is a large *Meer* or *Pool* some miles in compass, called *Brecknock-Meer*, where in former times stood a fair City, which was swallowed up by an *Earthquake*.

Hay, seated between the *Wye* and the *Dulas*; a Town of good note in the time of the *Romans*; being then fortified with a *Castle* and a *Wall*. It is at present a good Town, and hath a very great *Market* for *Corn*, *Cattle*, and *Provisions*, on *Mondays*.

Bealt, pleasantly seated amongst the Woods, and on the Banks of the *Wye*, over which it hath a very large *Wooden-Bridge*, which leads into *Radnorshire*; at present a pretty small Town, enjoying a considerable Trade for *Stockings*, and

County of
Cardigan.

Cardigan.

Llanbeder.

Aberysthwy.

County of
Caermarden.

Caermarden.

Llangharn.

and hath weekly two very good Markets, on *Mondays* for Cattle, and on *Saturdays* for Corn and Provisions.

CARDIGAN, a County of a different Soil, and ill clothed with Wood; the Southern and Western parts being plain and very fertile (yet not without some Hills,) and its Eastern and Northern parts are Mountainous, and not so fertile, amongst which is the *Plinillimon-Hill*, a Mountain of a very great extent and height.

Here are numbered 64 *Parish Churches*, and hath 4 *Market Towns*. *Cardigan*, formerly strengthened with a Wall, and a fair and spacious Castle, built on the side of the *Tywe* upon a Rock, long since brought to ruin. It is a Town no less pleasantly than commodiously seated on the said River *Tywe*, over which it hath a fair *Stone-bridge*, sustained by several Arches, and is of no great distance from its influx into the *Sea*; and being the *Shire-Town* where the *Affizes* are held, and the *County-Gaol* kept; is well inhabited and frequented, being a large Town, though containing but one *Church*, which is a fair Structure, and is graced with a well built *Shire-Hall*, with several good Buildings; and as a *Town Corporate*, is governed by a *Major*, *Aldermen*, *Common Council*, with sub-Officers; enjoyeth several Immunities, electeth a *Parliament man*, and hath an indifferent good Market on *Saturdays*.

Llanbeder, seated on the *Tywe*, over which is a Bridge which leadeth into *Caermarden-shire*; an indifferent good Town, governed by a *Port-Reve* and *Steward*, and hath a Market on *Tuesdays*, which is well resorted unto for Grain and Provisions, and from the latter end of *April* to the beginning of *July*, is very great for *Sheep*, *Heifers*, *Cows* and *Calves*.

Aberysthwy, seated on a Rising-ground, and on the Banks of the *Ridall*, near its influx into the *Sea*; a Town once strengthened with a Wall and Castle, now ruined. It is a long and ill-built Town, governed by a *Major*, with sub-Officers, hath a very great Market for *Corn*, *Wool*, *Cheese*, and *Provisions*, on *Mondays*, and is a place much resorted unto by reason of its *Fishing-trade*, and would be more were its Inhabitants industrious.

Near unto this Town is *Llan-Badernvaur*; a well-built Town, graced with a fair *Church*, which was formerly an *Episcopal See*, and is now the *Parish Church* of *Aberysthwy*.

CAERMARDEN-SHIRE is generally of a fertile Soil both for Tillage and Pasturage, as not being so Mountainous as its Neighbouring Counties, and is well watered with Rivers, as the *Towy*, *Tavy*, *Lough*, or *Taff*, which (with others) discharge themselves into the *Sea*, plentifully serving the Inhabitants with *Fish* and *Fowl*; and in many places are dug *Pit-Coal*.

Here are seated 87 *Parish Churches*, and is traded unto by 8 *Market Towns*.

Caermarden, pleasantly seated on the *Towy*, over which it hath a fair *Stone-bridge*, and is navigable for small Vessels, having a good *Key* for the lading and unlading of their Merchandizes. It is a place well inhabited and traded unto, and as a *Town Corporate* is governed by a *Major*, 2 *Sheriffs*, elected out of 16 *Burgeses* or *Aldermen*, all clad in *Scarlet*, with other sub-Officers. Amongst its Immunities electeth a *Parliament man*, keepeth Courts for the trial of Causes, is the place where the *Affizes* are held, and hath weekly two Markets, on *Wednesdays* and *Saturdays*, which are very great for *Corn*, *Cattle*, and *Provisions*, both *Flesh*, *Fish*, and *Fowl*, in great plenty. This Town glorieth in giving birth to *Merlyn*, that famous *British Prophet*, or *South-layer*.

Llangharn, or *Llangharn*, seated on the *Towy*, near its influx into the *Sea*; a well-built Town, of some Trade, having several Vessels belonging to it, and its Market, which is on *Fridays*, is very good for *Corn* and *Provisions*.

Near unto this Town is a *Wick*, or *Salt-work*, where good quantity of *Salt* made.

Llanelly,

Llanelly, seated on a Creek of the *Sea*; a pretty good Town, which is well traded unto for *Sea-Coal*, and hath a Market on *Thursdays*, of good account for all sorts of *Cattle*, *Corn*, and *Provisions*.

Llandilovawre, seated on the *Towy*, over which it hath a fair Bridge; a pretty good Town, having two Markets weekly, on *Tuesdays* and *Saturdays*, for *Cattle*, *Corn*, and *Provisions*; and the Parish to which this Town belongeth is about 13 miles in length, and 7 or 8 in breadth.

Llanymdyfry, seated amongst Rivers; a pretty fair *Bailiwick* and *Town Corporate*, and hath two very great Markets weekly, on *Wednesdays* and *Saturdays*, for *Provisions*, and the greatest in the County for *Cattle* and *Sheep*.

The County of **GLAMORGAN** is of a temperate and healthful Air, and of a different Soil and Situation; the Northern parts being extremely Mountainous, full of thick Woods, very barren, and thinly inhabited; yet are found to feed good Herds of *Cattle*, and to send forth several fresh Streams; the chief amongst which are the *Tavy*, *Taff*, *Ogmore*, *Rumney*, *Ely*, *Nid* or *Neath*, &c. and the Southern part, which is washed by the *Severn Sea*, and receiveth the said Rivers, is more upon a level, is very fertile both for *Corn* and feeding of great quantities of *Sheep* and *Cattle*, is well inhabited, and thick beset with Towns and Houses of the Gentry.

This County numbeth 118 *Parish Churches*, and hath the accommodation of 8 *Market Towns*.

Cardiff, the fairest Town in all South Wales, well seated on the River *Tave*, or *Taff*, over which it hath a fair Bridge, to which Vessels of small burthen do come to lade or unlade their goods; and in a rich and fertile Soil both for Tillage and Pasturage. It is a large and well built Town, with good ordered and clean Streets, containing within its Walls two Parishes, but hath but one Church; without the *East-Gate* is a large Suburb called *Crockerton*, without the *North-Gate* stands the *White-Friers*, and without the *West-Gate* a small Suburb adjoining to the *Black-Friers*, and in this part is seated the Castle, which is a strong, spacious, and stately Building. It is a *Town Corporate*, governed by a *Constable*, 12 *Aldermen*, as many *Capital Burgeses*, a *Steward*, *Town-Clerk*, with sub-Officers, enjoyeth several Immunities, electeth a *Parliament man*, is the place where the *Affizes* are kept; is well frequented and traded unto, its Inhabitants having a great intercourse of Traffick with *Bristol*, and its Markets on *Wednesdays* and *Saturdays* are very good, especially that on *Saturdays*, which is the best in the County, and very considerable for *Cattle*, *Corn*, *Swine*, *Sheep*, and all sorts of *Provisions* in great plenty, and at easy rates.

Llandaff, a City seated on the *Taff*, but of a small extent, scarce comparable to an indifferent Town, having not so much as a Market kept, which is occasioned by its vicinity to *Cardiff*. Its *Cathedral* is a spacious and superb Structure, and near adjoining are the Ruins of an Old Castle, which was the ancient Palace of the Bishops.

Neath, seated on a River so called, over which it hath a Bridge, to which small Vessels come for the lading of *Coals* here had in great plenty to the profit of its Inhabitants. It is a Town of great antiquity, and of a good extent, yet is it indifferent large, is governed by a *Port-Reve*, and hath a good Market for *Provisions*.

Swansey, commodiously seated on the *Sea-shoar*, an ancient *Port-Reve* Town, which is large and well built, which for Riches and Trade is esteemed the chief in the County, and that by reason of their *Coal-Pits*, and the great industry of its Inhabitants. It hath weekly two Markets, on *Wednesdays* and *Saturdays*, which are very well frequented and traded unto, affording great plenty of *Commodities* and *Provisions*.

A a

P E M.

County of
Pembroke de-
scribed.

PEMBROKE-SHIRE, is of fertile Soil both for Tillage and Pastu-
rage, is well stored with Cattle, and replenished with Rivers, which (with
the Sea) plentifully serveth the Inhabitants with *Fish* and *Powell*, and in the
bowels of the Earth are plenty of *Pit-Coal*.

It is well inhabited and garnished with Towns, numbring 245 *Parish*
Churches, and is traded unto by 8 *Market Towns*.

Pembroke, the chief Shire-Town, seated on the Eastern and innermost
Creek of *Milford-Haven*, over which it hath two fair Bridges for the con-
venience of passage. It is a place of good account, well frequented and inha-
bited by Gentlemen and Tradesmen, is much resorted unto by Shipping, by
reason of which they have a *Custom-house*. It is a place of good strength, be-
ing fortified with a Wall, on which are several Towers, having three Gates for
entrance, and also with a strong Castle seated on a Rock. It is a large Town
Corporate containing two *Parish Churches*, is graced with well-built Houses,
is governed by a *Major*, with other sub-Officers, enjoyeth several Immunities,
sendeth a *Burges* to Parliament; and its Market, which is on *Saturdays*, is
very good, and well served with Provisions, &c.

This *Milford-Haven* is esteemed the best in all England, not only for its
largeness, being capacious enough to give entertainment to about 600 Sail of
Ships at one time, and to ride secure at a good distance one from the other,
but also for its variety of deep and safe Creeks and nooked Bays for *Ships*
to harbour in, having within it 13 Roads, 16 Creeks, and 5 Bays, all which are
known by their several names.

St. Davids, seated within a mile of the Sea in a barren Soil, and very de-
stitute of Wood. It was once a City of good account, but at present is very
small, but thinly inhabited, and its Market disused; yet is it the See of a
Bishop, and its *Cathedral* kept in good order, but the *Bishops Palace* is much
ruinated.

Near unto *St. Davids* is a Promontory called *St. Davids Land* or *Head*,
from whence in a clear day *Ireland* may be seen; and on the Rocks in these
parts the *Falcons* have their *Airies* and breed. Also here is *Whitesand-Bay*,
and at the extrem point of the Promontory *Ramsey Isle* sheweth it self, nigh
to which are several small ones, which together bear the name of the *Bishop*
and his *Clerks*.

Haverford-West, a Town and County of it self, commodiously seated on the
side of a Hill, and on a Creek of *Milford-Haven*, over which it hath a good
Stone-Bridge which leadeth to *Prendergast*, where there is a Church. It is
very large and fair Town Corporate, containing three *Parish Churches*, is
beautified with good Houses, is well inhabited, enjoyeth a good Trade; having
several Vessels belonging to the Town; is the place where the *Affizes* are
held, and the *County Gaol* kept, and hath weekly two Markets on *Tuesdays*
and *Saturdays*, which are very great for Cattle and Provisions. It is go-
verned by a *Major*, a *Sheriff*, and *Common Council*, with *Justices of the Peace*;
it enjoyeth several Immunities, keeping Courts, and sending a *Burges* to Par-
liament; and near to this Town divers Gentlemen have their Seats.

Tenby, seated on the Sea-shoar, where it hath a commodious *Haven* or *Road*
for *Ships*, being formerly much frequented, especially by *Fishermen*; having
a good *Key*, enjoyeth a considerable Trade, and its Inhabitants were wealthy;
but the Spoils it suffered in the late Wars hath much impoverished it, notwith-
standing it keeps its two Markets weekly, on *Wednesdays* and *Saturdays*,
which are very well resorted unto for *Corn*, *Provisions*, and *Fish*.

Newport, seated near the Sea-shoar, and on the foot of a high Hill; a large,
but ill built and inhabited Town, governed by a *Port-Reeve* and a *Bailiff*, and
hath a good Market for *Corn*, *Cattle*, and *Provisions*; and here is a *Wear* for
Fishing.

R A D.

RADNOR-SHIRE. This County is of a sharp and piercing Air, and
very ungrateful to the Husbandman, as being so Mountainous and Rocky;
yet is it well watered with Rivers.

It hath but 52 *Parish Churches*, and is traded unto with three *Market*
Towns.

New Radnor, well seated near the Spring-head of the *Swansea*, and in a
pleasant Valley, at the foot of a profitable Hill for the feeding of *Sheep* and
Cattle, called the *Forrest of Radnor*. It is a very ancient Town Corporate,
whose Jurisdiction reacheth 10 or 12 miles in compass, is governed by a *Bailiff*
and 25 *Burgeses*, enjoyeth large Immunities, and hath the election of a *Par-*
liament man. It had formerly a Market on *Tuesdays*, but now disused.

Prestatney, seated on the *Lug*, and in a pleasant and rich Valley, which from a
small Village in former days, is now become a fair large and well built Town,
with paved Streets, is well inhabited and frequented, where the *Affizes* are
held, and the *County Gaol* kept; and its Market, which is on *Saturdays*, is
very good for Provisions and Grain, especially *Barly*, of which they make
good store of *Mault*.

Knighton, seated in a Valley, and on the *Teme*, over which it hath a Bridge;
a very fair and well built *Borough Town*, of a good resort, whose Inhabitants
enjoy a good Trade, and its Market on *Tuesdays* is very well served with
Cattle, *Corn*, *Provisions*, *Iron-ware*, *Hops*, *Salt*, *Linnen* and *Woollen*, and other
Commodities.

A a 2

The

The Kingdom of SCOTLAND, as it is divided in	Firm Land, where are thirty five Provinces, to wit,	Thirteen beyond the TAY (which with the Province of LORNE, made the ancient Kingdom of the SCOTS,) whereof	Five are towards the NORTH and WEST; as,	Strath-Navarn,	Strabally,
				Oathanes,	Tunge.
				Sutherland,	Girrege,
				Roffe,	Wich.
				Loquabree,	Dornok.
					Duncobit.
					Skryafin.
					Cromarty.
					Canorry.
					Lover.
					Kynulle.
					Inverlethey.
					Elgin.
					Invernes.
					Forres.
					Rothas.
					Beau.
					Narden.
					Badenoch.
					Rodhemay.
					Stanes.
					Aberdeen.
					New Aberdeen.
					Kildrumy.
					Fordon.
					Dunnottar.
					Brechin.
					Monrois.
					Dunde.
					Glammis.
					Ferfar.
					Perth.
					Scone.
					Dunkeld.
					Blair.
					Encerlthea.
					Dunfries.
					Tarbart.
					Bergonum.
					Swin.
					Sandell.
					Arran.
					Rothsay.
					Durwin.
					Dunbriton.
					Yrwin.
					Androffan.
					Largis.
					Kilweir.
					Ayre.
					Uchiltre.
					Bargeny.
					Blaquhan.
					Witherne.
					Wighton.
					Kilbourick.
					Cardines.
					St. Andrews.
					Cupre.
					Difert.
					Kinghorne.
					Abergeny.
					Dunblain.
					Clackmannau.
					Sterling.
					Linlithquo.
					Falkirk.
					Edinburgh.
					Dunbar.
					Leith.
					Haddington.
					Dalkith.
					Glasquo.
					Lanrick.
					Hamiltown.
					Reynfraw.
					Douglasdale.
					Dumfries.
					Solway.
					Anan.
					Lochnabain.
					Harlay.
					Aedon.
					Pebliis.
					Selkirk.
					Drimlar.
					Roxburgh.
					Yedburg.
					Hum.
					Coldingham.
					Kirkwall.
					Burgh.
					Sterwaye.
					Tranterne.
					St. Maria.
					Dunweg.
					Sodore.
					Arrois.
					Colm-kill.
					Downany.

ISLES, which make three Bodies, viz. those of

ORCADES, to the North of SCOTLAND, and to the N. North-east of ORCADES, Mainland, Lewis, Skye, Mull, Barra, Sula, Mull, Colm-kill, Rawghlin,

INCH GALLES, or Western Isles, To the West of SCOTLAND, among the which are

Towards the NORTH, the	Province of ULSTER; where are the Counties of	Dunagall, or Tyrconnell,	Donegal,
		Upper Tyrone,	Derry, or London Derry.
		Lower Tyrone,	Calebeck.
		Colone,	Tirconnel.
		Antrim,	Strabane.
		Downe,	Dungannon.
		Newry,	Colrane.
		Srangford,	Kingsfergus.
		Arglais,	Antrim.
		Trodaugh,	Downe.
		Dundalk,	Newry.
		Carlingford,	Arglais.
		Ardergh,	Trodaugh.
		Armagh,	Dundalk.
		Mountnorris,	Carlingford.
		Clogher,	Ardergh.
		Monaghan,	Armagh.
		Cavan,	Mountnorris.
		Fermanagh,	Clogher.
		Baltarbet,	Churchland.
		Castile,	Cavan.
		Holy-Cross,	Killmore.
		Clonmel,	Baltarbet.
		Caryck,	Castile.
		Lymerick,	Holy-Cross.
		Kilmallock,	Clonmel.
		Dingle,	Caryck.
		Trayley,	Emeley.
		Defmond,	Lymerick.
		Downbay,	Kilmallock.
		Corke,	Dingle.
		Kinfale,	Trayley.
		Waterford,	Donkylan.
		Cloncy,	Downbay.
		Waterford,	Corke.
		Dungarvan,	Kinfale.
		Majo,	Ros.
		Siege,	Yoghall.
		Galloway,	Cloncy.
		Clare, or Twomond,	Waterford.
		Roscoman,	Aradmor.
		Letrym,	Lifmore.
		Dublin,	Killybeg.
		East Meath,	Refraine.
		West Meath,	Siege.
		Longford,	Dundroes.
		Kildare,	Dunbrayle.
		Kings County,	Galloway.
		Queens County,	Kilmallock.
		Caterlough,	Cloncy.
		Wexford,	Kingstown.
		Kilkenny,	Clare.

Towards the EAST, the Province of LEINSTER; where are the Counties of

SCOTLAND.

Its situation.

Ancient Inhabitants.

Ancient division.

Modern division, and its Inhabitants.

Its extent.

Its name.

Its fertility and commodities.

THE Kingdom of *SCOTLAND* maketh the Northern part of *Great Britain*, and is divided from *England* by the Rivers *Tweed* and *Solway*, together with the *Cheviot-Hills*. A Country formerly inhabited by the *Picts*, who were divided into two Nations, *viz.* the *Dicalidonii* and the *Vecturiones*; but when the *Scots* became the chief Rulers (as Mr. *Cambden* noteth) it was shared into seven Part., and amongst as many Princes. The first contained *Enegus* and *Maern*; the second, *Atheold* and *Goverin*; the third, *Stradeern*, with *Meneted*; the fourth, *Forthever*; the fifth, *Mar*, with *Bucken*; the sixth, *Muref* and *Ross*; and the seventh, *Cathanes*, which Mound a Mountain in the midst divideth, running on forward from the West Sea to the East.

It was also (according to the relation of *Andrew Bishop* of *Cathanes*) divided into seven Territories, which Mr. *Cambden* also taketh notice of, as followeth. The first, from *Frith* or *Scotwade* to the River *Tae*; the second to *Hilef*, according as the Sea fetcheth a compass to the Mountain *Atbran* in the North-east part of *Strivelin*; the third, from *Hilef* to *Dee*; the fourth, from *Dee* to the River *Spe*; the fifth, from the *Spe* to the Mountain *Brunalban*; the sixth, *Mures* and *Ross*; and the Seventh, the Kingdom of *Argathel*, which is the Border of the *Scots*.

But the Kingdom at present, according to the habitation of the People, may be divided into *Highland-men* and *Lowland-men*; or into the Northern and Southern parts. The People of the former live either on the Western Coast, and are very rude, having much of the nature, disposition, speech, and habit of the *Tories* or *wild Irish*, or in the out Isles, and are utterly Barbarous. The *Lowlanders*, as bordering on *England*, have much of the disposition, civility, language, and habit of the *English*, and are supposed to be descended from the *Saxons*; which is confirmed by the *Highlanders*, who are the true *Scoti*, and are supposed to descend from the *Scythians*, who with the *Getes* inhabiting *Ireland*, left their Issue behind them.

This Kingdom is very spacious, extending it self from North to South about 250 miles in length; and in breadth, where broadest, about 150; but contracting it self narrower and narrower as it approaches its extream Northern limits, as doth appear by the Map.

It is said to have been called *Scotia* from *Scoti*, *Scitti*, or *Scythi*, a People of *Germany*, over whose Northern limits the name *Scythia* did extend; although there be many that will have it to be so called from *Scota*, Daughter to an *Egyptian Pharaoh*.

Although this Kingdom is less fertil than *England*, and its Fruits not so plentiful, nor so pleasing to the palate, (occasioned through the coldness of the Clime,) yet is it found to have great plenty of Cattle, though but small; and for *Fish* and *Fowl* an innumerable quantity, amongst which is a Fowl called the *Soland-Geese*, which in many places are taken in very great plenty, and are found very profitable to the Inhabitants, not only for their Flesh to eat, but for their Feathers and Oil. Their chief Commodities are *Course Cloths*, *Freezes*, *Lead-Oar*, *Feathers*, *Sea-Coal*, *Alum*, *Iron*, *Salt*, *Salt-Peter*, *Linnen-Cloth*, *Train-Oil*, *Hops*, *Wood*, *Alabaster*, some *Hides* and *Tallow*, &c.

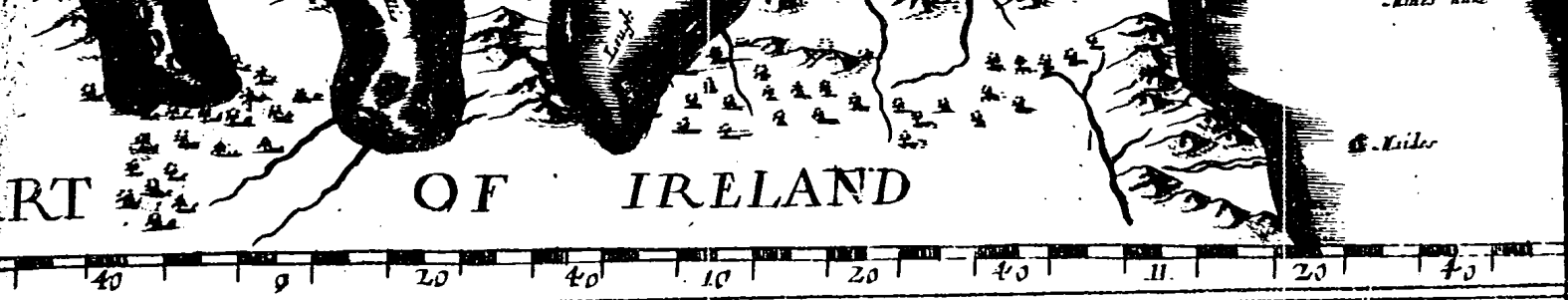
The

C
Fard



My R^t Noble Father, Duke of
Annamouth, & Buckleugh Earle of
Downe & Rathfarnham, of Kendeale
Wicklow & of Mullingar, &c. my Father & one
of his Maj^{ties} most Hon^{ble} Privy Councill
This day is most humbly desired
By Ric^o Blincoe







The Inhabitants (especially those Southernly) are of a good feature, strong of body, very hardy, couragious, and fit for Martial affairs; and their *Nobility* and *Gentry*, which are of several degrees, as *Dukes*, *Marquesses*, *Earls*, *Viscounts*, *Barons*, *Knights*, *Esquires*, and *Gentlemen*, are generally very ingenious, and accomplished men in all civil knowledge.

This Kingdom, like unto *England*, consisteth of a *King*, *Nobility*, *Gentry*, and *Commons*; and these with the *Lords Spiritual*, assemble together in Parliament, as often as they are called together by Writ from the King: And by reason of his Majesties residence in *England*, so that he is not here at their *Sessions of Parliament*, he constituteth and sendeth one to act as his *Vice-Roy*, who is commonly called *Lord Commissioner*; and such at present is the Right Noble *John*, Duke of *Lotherdale*, &c.

Amongst the things worthy of note in this Kingdom for Antiquity, famous was that Fortification drawn from *Abbrcorne* upon *Edenborough Frith* unto *Alcluyd*, now called *Dunbritton*, opening upon the West Sea, where (as *Speed* saith) *Julius Agricola* set the limits of the *Roman Empire*, past which, according to *Tacitus*, there were no other bounds of *Britain* to be sought for. And here the second Legion of *Augusta*, and the twentieth of *Vittrix*, built a part of the Wall; as also an ancient coped Monument of an high and round compass, which according to the opinions of some, was a Temple consecrated to the God *Terminus*; but others there be that will have it to be a Trophy raised by *Carausius*, who fortified this Wall with seven Castles.

Here began that Wood *Caledonia*, which name *Tacitus* attributeth to all that Tract of ground which lieth Northward beyond *Grahames Dike*, or the Wall of *Antonius Pius*, which *Ptolomy* divideth into several Nations, as the *Caledonii*, *Vacomagi*, *Epidori*, &c. who are all known to the *Romans* by the general name of the *Picts*, from their painting themselves. This Wood or Forrest was very spacious, and over-shadowed with Thickets and tall over-spreading Trees, which rendred it impassable, and was divided by *Grampe-Hill*, now called *Grantzghain*, that is, the crooked bending Mountain. *Solinus* is of opinion that *Ulysses* was in *Caledonia*, and to confirm his belief therein, he saith, there was a *Votive Altar* with an Inscription in Greek Letters. *Plutarch* saith, that *Bears* were brought out of *Britain* to *Rome*; but for more truth it may be said, that here were bred the wild white Bulls, a Beast of nature fierce and cruel, whose thick and curled manes resembled the *Lions*. In the days of *Severus Argetecox*, a petty Prince reigned over this Tract of Ground, whose Wife being reproachfully called by *Julia* the Empress, an *Adulteress*, boldly made this Answer, *We British Dames have to do with the best of men, but you Roman Ladies secretly commit the same with every base and lewd companion*.

In this Kingdom are two famous Loughs, *Nessa* and *Lomund*, the former never Friezeth though in the extreamest cold weather; and the waters of the latter, most raging in the calmest and fairest weather; and herein is an Island, that the Wind forceth or moveth to and fro.

In the Rivers *Dee* and *Done*, besides the great abundance of *Salmons*, is taken a *Shell-fish*, called the *Horse-muskle*, wherein *Pearls* are engendred, which are very good in many *Physical Medicines*, and some of them not much inferiour to the *Oriental Pearl*.

As to their Courts of *Judicature* they are peculiar to themselves, and are several. The chief amongst which is the *High Court of Parliament*, consisting of *Lords* and *Commons*, hath the same Authority as that of *England*, and is also summoned by Writ from his Majesty at his pleasure, as occasion requireth.

The second Court is the *Sessions*, or *Colledge of Justice*, consisting of a *President*, 14 *Senators*, 7 of the *Clergy*, and as many of the *Laity* (unto whom was afterwards adjoyned the *Chancellor*, who is the chief, and 5 other *Senators*) besides 3 principal *Scribes* or *Clerks*, and as many *Advocates* as the *Senators* see convenient: And this was thus constituted by King *James* the Fifth in *Anno* 1532, after the form of the Parliament at *Paris*. These sit and administer

its Inhabitants.

Nobility and Gentry of Scotland. Their Sessions of Parliament.

Things worthy of note.

Caledonian Wood.

Camden, p. 32.

Two famous Loughs.

Courts of Judicature. Court of Parliament.

Colledge of Justice.

administer Justice with equity and reason, and not according to the rigour of the Law, every day (except *Sundays* and *Mondays*) from the first of *November* to the 15 of *March*; and from *Trinity Sunday* to the first Calends of *August*; and all the time between (as being either Seed-time or Harvest) is vacation. They give judgment according to the *Parliament Statutes*, and *Municipal Laws*; and where they are defective, they have recourse to the *Imperial Civil Law*.

Other Courts.

There are likewise in every Shire or County *inferiour Civil Judicatories* or Courts kept, wherein the *Sheriff* of the Shire, or his *Deputy*, decideth the Controversies and Law-suits of the Inhabitants; from which there are sometimes Appeals to the Sessions or Colledge of Justice. And these *Sheriffs* are for the most part Hereditary.

Besides these Courts, there are other Judicatories, which they call *Commissariats*, the highest whereof is kept at *Edinburgh*; and these have to do with Ecclesiastical affairs, as *Wills* and *Testaments*, *Divorcements*, *Tithes*, &c.

In criminal Causes, the Kings Chief Justice holdeth his Court at *Edinburgh*.

Likewise the *Sheriffs* in their Territories, and the *Magistrates* in some Boroughs may sit in Judgment of *Manslaughter*, in case the *Man-slayer* be taken within 24 hours after the fact committed, and being found guilty by a Jury, may be put to death; but if the said limited time is past, the matter is referred, and put over to the Kings Justice, or his Deputies.

There are also *Civil Courts* in every Regality holden by their *Bailiffs*.

Ecclesiastical Government.

This Kingdom, as to Ecclesiastical Government, is divided into two *Archbishopricks*, viz. of *St. Andrews* (the Primate of *Scotland*) and of *Glasgow*; and under these are several *Suffragan-Bishops*, viz. under him of *St. Andrews*, those of *Dunkeld*, *Aberdon*, *Murray*, *Dunblan*, *Berobis*, *Ross*, *Cathanes*, and *Orkney*; And under him of *Glasgow*, those of *Galloway*, *Argile* or *Lismore*, and the *Isles*.

Ancient Inhabitants of Scotland.

The ancient People of this Kingdom were, 1. The *Gadens*, who possessed the Counties of *Lothien*, *Merches*, and *Teisdale* or *Tivedale*. 2. The *Setgovie*, or Counties *Liddisdale*, *Eusdale*, *Eskdale*, *Annadale*, and *Nidthefdale*. 3. The *Novantes*, or Shires of *Galloway*, *Carrick*, *Kyle*, *Cunningham*, and *Arran*. 4. The *Damnii*, or Counties of *Cludesdale*, *Striveling*, *Lennox*, *Menteith*, and *Fife*. 5. The *Caldedonii*, or Shires of *Stratherne*, *Argile*, *Cantire*, *Lorne*, *Albany* or *Bruidalbin*, *Perch*, *Athol*, *Angus*, and *Mernis*. 6. The *Vermines*, or Counties of *Mernis* and *Marr*. 7. The *Talgali*, or County of *Bugubhan*. 8. The *Vacomagi*, or Counties of *Murray* and *Loquabrea*. 9. The *Cantie*, or Shires of *Ross* and *Sutherland*. 10. The *Catini*, or County of *Cathanes*. And 11. the *Cornubii*, or County of *Strathnaver*.

Scotland divided into Sheriffdoms.

These parts are again (according to their *Civil Government*) divided into *Sheriffdoms*, *Stewarties*, and *Bailiffwicks*; viz. the Counties or Sheriffdoms of *Edinburgh*, *Lythio*, *Selkirk*, *Roxburgh*, *Peblis*, *Berwick*, *Lanark*, *Renfrew*, *Dunfreis*, *Wighton*, *Aire*, *Bute*, *Argile*, *Yarbet*, *Dumbarton*, *Perch*, *Clackmannan*, *Kinross*, *Fife*, *Kincardin*, *Forfair*, *Aberdene*, *Bamff*, *Elgin*, *Forres*, *Narne*, *Inverness*, *Cromartie*, *Orkney*, and *Sutherland*.

Stewarties. Bailiffwicks. Its further division.

The *Stewarties* of *Menteith*, *Kircudbrieht*, *Stratherne*, and *Amandale*.

The *Bailiffwicks* of *Kile*, *Carrick*, and *Cunningham*.

Again, *Scotland* (according to the Situation of its Parts, Provinces, or Counties) may be divided into two parts, to wit, Southwards, and on this side the *Tay*, which made the ancient Kingdom of the *Picts*, (so called, for that they painted their Bodies like the ancient *Britains*, from whom they are said to descend, which is the more confirmed, for that the Northern *Britains*, converted to the Faith by *St. Colombe*, were called *Britain Picts*.) And Eastwards, Northwards, and beyond the *Tay*, which made the ancient Kingdom of the *Scots*; besides abundance of *Isles* dispersed in its Northern and Western Seas, the chief of which shall be treated of.

The

The Counties comprehended in the South-part, are *Lothien*, *Merche*, *Teisdale* or *Tivedale*, *Eskdale*, *Eusdale*, *Liddisdale*, *Annadale*, *Nidthefdale*, *Galloway*, *Carrick*, *Kyle*, *Cunningham*, *Cludesdale*, *Lennox*, *Striveling*, *Menteith*, *Fife*, *Stratherne*, *Argile*, *Lorne*, *Cantire*, and *Arran*. And these in the North part are, *Albany* or *Bruidalbin*, *Perch*, *Athol*, *Angus*, *Mernis*, *Bugubhan*, *Marr*, *Murray*, *Loquabrea*, *Ross*, *Sutherland*, *Strathnaver*, and *Cathanes*. And of these in order.

The County of *Lothien*, in former times by the *Picts* called *Pictland*, shooteth it self forth from *Merche* unto the *Sea*; a Country very Hilly, and but thinly clothed with Wood: but for the fertility of its Earth, and the civility of its Inhabitants, is deservedly esteemed the flower of all *Scotland*. The chief places are,

Its name and fertility.

Edinburgh, or *Edenborow*, of old, *Castrum Alatum*, the Metropolis of the Kingdom. Its situation is high, in a wholsom Air, and rich Soil; and by reason of its commodious Haven (called *Leith-Haven*, not above a mile distant) it is a place of good Trade, and well resorted unto by Shipping. This City chiefly consisteth of one Street, which runneth about a mile in length, which receiveth divers petty Streets and Lanes, so that its circuit may be about three miles, which is strongly begirt with a Wall; and at the West-end of the City, on the top of a Rock, is seated a fair and powerful Castle, with many Towers, which commands the City, and is esteemed in a manner impregnable. It belonged once to the *English*, till in *Anno 960*. the *Scots* took it from them, when oppressed by the *Danish* Tyrannies. It is well watered with clear *Springs* and *Fountains*, is adorned with many fair *Edifices*, as well publick as private, the principal amongst which is the *Kings Palace*, a fair Structure; and its private Houses are generally fair, lofty, built of *Free-stone*, and so well inhabited, that several Families have their abodes under one Roof. It is also dignified with the Courts of *Judicature*, *High Courts* of *Parliament*, and with an *University*. And being the Scale of Trade for the Kingdom, it will be necessary to give an account of their *Coins*, *Weights*, and *Measures*. As to their *Coins*, note that 13½ d. *Sterling*, makes a Mark *Scotch*; 6½ d. *Sterling*, a *Scotch* Noble; and 20 d. *Sterling*, a *Scotch* Pound. Their *Weight* used in Merchandizes, is the *Pound* of 16 Ounces, 100 of which make their *Quintal* or *C*, which is found to make at *London* 108 l. *Averdupois*. Their *Measures* for length is the *Ell*, and is about 4 per Cent. greater than the *English* Ell. Their *Liquid Measures* are such as in *England*, but of a double content, a Pint being an *English* Quart, and so answerable. Their *Dry Measures* are also the same with those of *England*, but also bigger.

Its chief places. Edinburgh.

Their Coins, Weights, and Measures.

Abelstanford, so called from *Abelstane*, a chief Commander of the *English*, which was there slain with most of his Men, about the year 813.

Abelstanford.

Haddington, seated in a wide and broad Plain; a place of good account, and which the *English* fortified with a deep and large Ditch, and other Fortifications.

Haddington.

Dunbar, situate on the Sea-shore, once defended by a strong Castle, which was the Seat of the Earls of *Merch*; a place which hath oftentimes been taken by the *English*, and as often retaken by the *Scots*, which was the cause of its demolition; since which it is honoured with the Title of an *Earldom*.

Dunbar.

North-Berwick, seated on *Edenbrough Frith*, a place in former Ages famous for its House of *Religious Virgins*.

North-Berwick.

Not far from this place, and near the Shoar, lieth a small Isle called *Baile Island*, which seemeth to be a high craggy Rock, and to be almost cut through by the undermining *Sea-waves*. It hath a *Fountain of Water*, and fresh *Fishes*; and above all is remarkable for the exceeding great abundance of those little called *Scots* and *Solund-Geese*, which here frequent and breed, which (as I before noted) is very profitable to the Inhabitants in these parts.

Baile Island.

Lyth, hath a most commodious Haven, being the present Port to *Edinburgh*. *Abercorne*, seated on the *Forth* or *Frith*, in former time of note for its famous Monastery; as at present for giving Title of an Earldom unto the Duke of *Hamilton*.

Lyth.

Abercorne.

B b

Linguo,

Lingoe, or *Linlithquo*, said to be the ancient City of *Lindum*, mentioned by *Ptolemy*; a place once beautified with a House of the Kings, and a fair Church.

MERCH, a County so called, as being a *March*; it is wholly on the *German Ocean*, was of great note for its *Earls* thereof; and hath for its chief places,

Coldingham, called by *Bede* the City *Coldana*; a place of great antiquity and note for its chaste *Nuns*; for it is said, that they (together with *Ebba* their *Prioreß*) cut off their own *Noses* and *Lips* to render themselves deformed, that the *Danes* might not deslour them; but this so exasperated them, that they not only burnt their Monastery, but them therein.

Not far from *Coldingham* is *Fast-Castle*; and here the Sea thrusteth it self forth into a Promontory called *St. Abbs-head*.

Kelfo, formerly famous for its Monastery, which (with thirteen others) King *David* the First braided from the ground, for the advancement of Gods glory.

TEIFIDALE, that is, the *Vale by the River Teife* or *Teviat*, adjoining to *England*; a craggy hilly Country. Its chief places are,

Roxburg, which gives name to a Territory adjoining, seated between the Rivers *Tweed* and *Teife*; once a place of great strength, being defended by a *Castle* and towred Fortifications; and here it was that King *James* the Second of *Scotland*, was unfortunately slain by the breaking of a *Cannon* at the *Sigge*.

Jedburgh, a well frequented and inhabited *Borough-Town*, seated near the confluence of the Rivers *Teviat* and *Ted*.

Pebbis, seated on the *Tweed*, and a branch thereof; a *Market-Town* of some account.

Merlos, seated also on the *Tweed*, formerly of note for its ancient Monastery of cloistered *Monks*; that gave themselves to Prayer, and to get their livings by their handy labour; and this place holy King *David* restored, and replenished with *Cistercian Monks*.

ESKDALE, a small Territory, so called from a River which passeth through it; its chief place was,

Helica, that ancient City, wherein the Tribune of the first Band of the *Africans* kept *Watch* and *War* against the Northern Enemies.

RUSKDALE, another small Territory, which takes its name from the River that watereth it.

LIDDISDALE, also another small Territory, which receiveth its name from the River that passeth through it. Its chief places are,

Brankensley, *Harlay*, and *Armetage*.

ANNADALE, that is, the *Vale by the River Annan*. Its chief places are, *Annadale*, seated at the Mouth of the River *Annan*. And *Lough-Maban*, a Town of good strength, as well by Nature as Art; nigh unto which is a strong *Castle*.

NITHESDALE, or *NIDDESDALE*, a County so named from the River *Nid*, which watereth it; a County of a fertile Soil, which beareth good Corn; hath rich Meadows and Pastures; and in the *Solway*, which watereth its Southern part, are taken great store of excellent *Salmons*, which the Inhabitants (for their Recreation) oft-times hunt on Horse-back with *Spears*. Its chief places are,

Dunfries, seated between two Hills, and on the River *Nid*, near its influx into the *Solway*; once strengthened with a *Castle*; a Town of good account for making of *Woollen Cloths*; but more remarkable for the Murder of *John Gunman*, an *Earl* of great eminency amongst the *Scotts*, who was slain by *Robert Bruce* in the Church, out of fear lest he should fore-close his way to the Kingdom.

A Nigh unto this Town is *Solway*, a small place, which seemeth to retain something of the old name of *Sigova*.

Carr-

Caer-Laverock, seated at the Mouth of the *Nid*, in former time of so great strength, that (for a good while) it stoutly resisted the power of King *Edward* the First, who besieged it.

Corda, also a flourishing Town in former Ages.

GALLOWAY, a County so called of the *Irish*, who once here inhabited, in former times had *Princes* and *Lords* over it. It is a Country much inclined to Hills, which renders it more fit for Grazing than Tillage, breeding abundance of small and well limbed *Nags*, which for their nimbleness and hardiness are esteemed excellent for a Traveller: And the Sea, by which it is washed, together with its *Bays*, *Creeks*, *Meers*, and *Loughs*, affords the Inhabitants store of excellent Fish. Its chief places are,

Kircoubricht, the most commodious Port-Town on this Coast; and the second *Stewary* of *Scotland*.

Cardines, a place or Port of great strength, as well by Nature as Art, being seated on a craggy high Rock, by the River *Fleet*, and fenced about with strong Walls.

Wigton, seated on a Bay of the Sea, between the Rivers *Cre* and *Bladno*; a good Haven-Town.

Not far from this Town, and on the Sea-shoar, *Ptolemy* placed the ancient City *Leucopibia*, which is now called *Wytherne*; and here it is said, *Ninra*, or *Ninian*, a holy *Britain*, who first instructed the *South-Picts* in the Christian Faith, in the Reign of the Emperour *Theodosius* the younger, had his Seat, and built a Church to the honour of *St. Martin*.

CARRICT, a County that hath rich Pastures, and is well furnished with all necessities both by Land and Sea, where it beareth the name of *Dunbritain-Frith*; a large and capacious Bay, which with its *Rivers* and *Loughs*, affords its Inhabitants plenty of Fish. Its chief places are,

Barganle, a place of great antiquity. *Arduntoun* and *Cosfregall*.

KTLB, a fertile County, and well inhabited; and hath for its chief places, *Aire*, seated on a River so called, where it looeth it self into the *Frith*; a place of some account, being a *Sheriffdom*: And *Ochiltre*.

CUNNINGHAM, also washed with *Dunbritain-Frith*; a County no less commodious and fertile, than pleasant, being plentifully watered. Its chief places are,

Irwin, a *Borough-Town*, seated on a River so called, at its influx into the *Frith*, where it hath a Haven, though now choaked up.

Largis, where *Alexander* the Third destroyed abundance of the *Norwegians*: And *Androsan*.

CLUDESDALE, a County so called from the River *Cluid*, that watereth it. Its chief places are,

Glasco, pleasantly situate on the River *Cluyd*, over which it hath a fair Bridge sustained by eight Arches. It is a City of good account, well frequented and inhabited, enjoyeth a good Trade, and is dignified with the See of an *Arch-bishop*, as also with an *Univeristy*.

Douglas, seated on a River, and in a Vale so called.

Lanrick, the Hereditary *Sheriffdom* of the *Hamiltons*, who take their name from *Hamilton-Castle*, seated on the fruitful Bank of the *Cluid*.

Reinfraw, which gives name to a *Barony*.

Paslay, in former times a famous Monastery, founded by *Alexander* the Second, High Steward of *Scotland*, which for a stately Church, with rich Furniture, was inferiour to few.

LENNOX, a County very Hilly, and well watered with Rivers, amongst which is the *Cluid*, and the large Lough *Lomond*, about 20 miles in length, and in breadth, where broadest, about 8, in which are many small Isles, amongst which some are said to float about; a place noted for great plenty of Fish, especially for a Fish called a *Polloc*, found no where else: This County is honoured in giving Title to the Right Noble the Duke of *Richmond* and *Lennox*, &c. Its chief places are,

B b 2

Dun-

Dunbritton.

Dunbritton, that is, the *Britains Town*, for that the *Britains* held it longest against the *Scots, Picts, and Saxons*; being the strongest place in all the Kingdom, as well by Nature as Art, being loftily seated on a rough, craggy, and two-headed Rock, at the meeting of the Rivers near the large Lough *Lomond*, and in a green Plain; in one of the tops is, or was, placed a *Watch-Tower*, and on the other several Fortifications, or Bulwarks; on the East-side it hath a boggy Flat, which at every Tide is covered with water; and on the South it hath the River *Clid*.

Alclud.
Of a fertile
Soil.

Alclud, an ancient City, by some said to be the same *Dunbritton*.
STRIVELING, or *STIRLING*, a County of a fertile Soil, and well inhabited; and here is that narrow Land or Straitway which *Edinburgh-Frith* and *Dunkeith-Frith* (thrusting themselves far into the Land, out of the East and West Seas) are separated from meeting together; which space was fortified with Garrisons between, by *Julius Agricola*, so that all the part on this side was in the possession of the *Romans*; and their Enemies were forced to retire themselves into the more Northern and Hilly part of the Kingdom; but this lasted not long, for *Agricola* being called home, the *Caledonian Britains* forced the *Romans* back as far as the River *Tyne*: and when *Hadrian* arrived in *Britain*, about 40 years, after, instead of going farther, he gave command that the God *Terminus* (which used not to give ground to any) should be withdrawn back; and that a Wall of *Turfs* (commonly now called *Grahams-Dike*) should be made between the Rivers *Tyne* and *Eske* Southward, on this side *Edinburgh-Frith*, for about 100 miles, which proved successful unto them. And along this Wall hath been oft-times found several Inscriptions, and pieces of *Romish* Antiquities. And of remark was that ancient round building, 24 Cubits high, and 13 broad, open at the top, and framed of rough and unpolished Stones, without any Cement, Lime, and Mortar; some call this the Temple of the God *Terminus*, others *Arthur's Oven*, and others *Julius Hoff*, as supposing it to be raised by *Julius Caesar*; but *Camden* would rather believe it to be built by *Julius Agricola*, who fortified these parts, had not *Ninius* said, it was built by *Caraculus*, as a Triumphal Arch in memory of some Victory. The chief places in this County are,

Stirling.

Stirling, *Striveling*, or *Stirling-Borough*, a place of good strength, and fortified with a powerful Castle, high mounted on the brow of a steep Rock; a place dignified with the birth of King *James the Sixth of Scotland*, and First of *England*, who afterwards caused it to be beautified with new Buildings.

Falkirk, &c.

Falkirk, *Cumirnauld*, and *Torwood*.
MENTEITH, a County so called from the River *Teith*: Its chief places are,

Dunblain.
Clackmannan.

Dunblain, seated on the River *Teith*, being the See of a Bishop; and *Clackmannan*.

Of a very
fertile Soil.

FIFE, a fertile County in Corn and Pasturage, hath *Pit-Coal*, and the Sea with its two Arms, *Forth* and *Tau*, which almost encompass it, affordeth store of *Oysters* and other Fish. Its chief places are,

St. Andrews.

St. Andrews, of old, *Regimund*, that is, *St. Regulus Mount*, which *Ung* or *Oeng*, King of the *Picts*, gave to God and *St. Andrew*, that it should be the chief and Mother Church of the *Picts* Kingdom. It is a City pleasantly seated on the Sea-shore near *Fif-nefs*, is fortified with a fair and strong Castle, is dignified with an *Archiepiscopal See*, which is Primate of all *Scotland*; and is also honoured by being the Seat of the *Muses*.

Disert.

Disert, seated on the rising of a Hill, and in an open Heath so called, where there is a large place called the *Cole-plat*; that affordeth good store of *Bitumen*.

Dunfermling.

Dunfermling, a famous Monastery in old times, and of note as well for its Building, and being the Burial-place of King *Malcomb the Third*, as for giving Title to the Earl of *Dunfermling*.

Falkland.

Falkland, well, and pleasantly seated for Hunting, for which purpose the Kings have had here their Retiring-house.

Cupre.

Cupre, a *Borough-Town*, of some note.

STRA-

STRATHERNE, that is, the *Vale along the River Ern*, hath for its chief places,

Abergenny, once a City of good account, being the Royal Seat of the *Picts* Kings, which (as 'tis said) *Neftane* their King, dedicated to God and *St. Bridget*, with a Tract of ground thereto belonging.

Drimein-Castle, well seated on the River *Ern*.

Tulibardin-Castle, situate also on the same River.
ARGILL, a County well furnished with *Pools*, in which, together with the Sea, and its many Arms, which it sendeth forth, are taken great plenty of good Fish; and in its Mountains are bred a kind of *guled Deer*. Places of good account are none in this County.

LORNE, a County of an apt Soil for bearing of *Burley*, is well watered, being divided by the large Lough or Lake called *Leana*; its chief places are,

Dunblafage, seated near the said Lake, once dignified with a House of the Kings.

Tarbar, where King *James the Fourth* ordained a *Justice* and a *Sheriff*, to administer Justice to the Inhabitants of the out-Isles, and *Bergonum*.

CANTIRE, that is, the *Land-head* as thrusting itself forth with a long and tapered *Promontory*, which *Pylos* called the *Promontory Epidiorum*; between the extrem points of which and *Marlock*, or *Far-Bay* in *Ireland*, there are scarce 12 miles. Its chief places are *Kiltan* and *Sandell*.

ARRAN, a small County and Isle near unto *Cantire*, hath for its chief places *Arran* and *Rothlay*.

ALBAINE, or *BRAD-ALBIN*, whose Inhabitants are called the *Highlanders*; a kind of rude and warlike People, and much of the nature of the *Irish* in habit and disposition. Its chief places are *Burrolthead* and *Ferra*.

PERCH, a large and fertile County, hath for its chief places,

Perch, or *St. John's Town*, a place of good account, and once larger than now it is, being built by King *William*; it is pleasantly seated between two Greens, and on the River *Tau*, which is navigable for *Barges*.

Dunkelden, dignified by King *David* with an *Episcopal See*, supposed to be a Town of the *Caledonians*.

Also on the *Tau* stood the little City of *Berch*, which was washed away by the overflowings of the said River, together with many of its Inhabitants, amongst which was an Infant-Child of the Kings in its Cradle.

Scone, seated on the farther side of the *Tau*, dignified with an Inauguration of the *Scotch* Kings before their Union to *England*, *Westminster* now being the place; and where the Chair, in which the Kings were then Crowned, is, which is at present made use of upon the like occasion.

ATHOL, an indifferent fertile County, and well clothed with Wood, where is that large and overshadowed Wood *Caladonia*, already treated of; a Country said to be infamous for *Witches*. Its chief place is *Blair*.

ANGUIS, a fertile County both for Corn and rich Pastures, is well watered with several Rivers, which lose themselves in the Sea, which serveth for its Eastern bounds: It is interlaced with *Hills* and *Forests*, and garnished with divers *Forts* and *Castles*. Its chief places are,

Dundee, seated on the Mouth of the River *Tay*; a noted and well resorted Town for Trade, by reason of its commodious Port for Ships.

Brechin, situate on the River *South-Eske*, near its fall into the Sea, and dignified by King *David* the First with an *Episcopal See*. Nigh unto this Town is *Red-head*, a place not unknown to Seamen.

Montrose, of old *Celurca*, of some account for being honoured with the Title of an Earldom;

Arbroth, seated near the Sea; a Town endowed with large Revenues, and by King *William* dedicated to a Religious use, in honour of *Thomas of Canterbury*.

MERNIS.

Abergenny.

Drimein.
Tulibardin.

Dunblafage.

Tarbar.
Bergonum.This County
seated near
Ireland.
Kiltan.
Sandell.
Isle of Arran.The High-
landers.

Perch.

Dunkelden.

Berch.

Scone.

Caladonia
Wood.Very fertile and
well watered.

Dundee.

Brechin.

Montrose.

Arbroth.

Very fertil.

MERNIS, or **MERNIA**, a small, but plain and fertile Champaign Country, which shooteth it self forth on the *German Ocean*: Its chief places are,

Dunnotyr.

Dunnotyr, defended by a strong Castle, seated on an high and inaccessible Rock, near the Sea.

Fordon.

Fordon, seated also not far from the Sea.

BUQUIHAN, washed with the Sea, whose Waves did here cast up mighty Masses of *Amber* of an inestimable value; it hath good Pastures, most to feed *Sheep*, whose *Wool* is excellent; and its Rivers breed store of *Salmon*, which are had at such easie rates, that it is scarce worth the trouble of taking them. Its chief places are *Rotherney* and *Stanes*.

Adjoyning to this Country lieth *Boena* and *Bamff*, a small *Sheriffdom*; also *Ayza*, a little Territory of no great note.

Marr.

MARR, a long and narrow County, somewhat inclined to Mountains, but well watered with the *Done* or *Dee*, well stored with *Salmons*; and other Fish. Its chief places are,

Aberdene.

Aberdene, seated on the Sea-shoar, at the Mouth of the *Done*, dignified with an *Episcopal See*, hath an *Hospital*, also a *Free-Grammar-School*, and is of note for taking of *Salmons*; and *Kildrummy*.

Kildrummy.

Murray.

MURRAY, a pleasant and fertile County, and the rather as watered with the *Spey*, *Findorne*, and the River and Lake *Nessa*, which reacheth about 23 miles in length, the water whereof is observed to be so warm, that it never is found to freeze; and this Lake is its Northern limits, as the *Spey* is its Eastern, all which empty themselves in the Sea, where it formeth a Bay. Its chief places are,

Invernes.

Invernes, *Bean-Castle*, which *Ptolomy* thinks to be *Banatia*; and here Anno 1466. a Marble-Vessel artificially engraven, full of *Roman Coins*, was found.

Narden.

Narden, or *Narne*, an hereditary *Sheriffdom*; and here stood within a bay land a strong Fortress of a great height, which was kept by the *Danes* against the *Scots*.

Innerlothia.

Elgin.

Roths.

Invernes, and *Innerlothia*, in former times two eminent Fortifications. Also *Elgin* and *Roths*, places honoured with the Titles of *Earldoms*.

Iron-Mines.

Innerlothey.

LOQUABREA, a County well stored with *Rivers* and *Lakes*, which empty themselves into the Sea; it hath also good Pastures, yet is it very Mountainous, and well clothed with Wood, and in the bowels of the Earth are Mines of *Iron*. Its chief place is,

Its fertility.

Innerlothey, once of good account, being well frequented and traded unto, but through the *Pyracies* and Wars of the *Danes* and *Norwegians*, who razed it, it hath now scarce any Remain left.

Cromarty.

Ness-mouth.

Loret.

Ardmanoch.

ROSS, a large, Mountainous, and Woody County, which reacheth from one Sea to the other; hath great plenty of *Stags*, *Deer*, *Wild-fowl*, and *Fish*. Its chief places are,

Cromarty, or the *Haven of Safety*, as having so secure and capacious an Harbour for Ships. *Ness-mouth* and *Loret*.

In this County is the Territory of *Ardmanoch*, very Mountainous, from which the second Sons of the Kings of *Scotland* bear their Title.

SUTHERLAND, regarding the Sea, is well watered with Rivers, besides the large Lough or Lake *Shyn*, almost in the midst of the Country; Westwards of which are great store of Hills, from which is dug excellent *White Marble*, very good for curious Works. It is a Country more fit for breeding of Cattle, than for Tillage; and hath for its chief places *Dunrobin* and *Dorno*.

Dunrobin.

Dorno.

Very cold and barren.

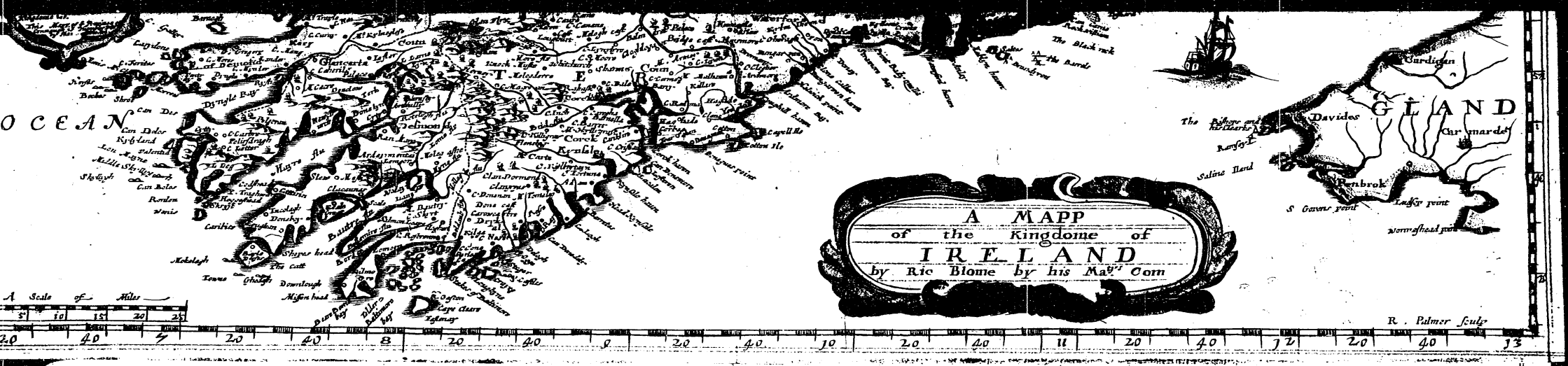
STRATHNAVERNE, a County far engaged Northwards, which with *Cathanes* have the utmost Northern Coast of all *Britain*, which must occasion it to be of a very cold temperature; it is very much inclined to sterility, is Mountainous, and but ill inhabited. Its chief places are *Strabubaster* and *Tounge*.

Strabubaster.

Tounge.

CATH





CATHANES, a County washed with the *Eastern Ocean*, where it formeth several Creeks, and is well watered with Rivers, which afford good store of Fish, from which, and by the grasing and feeding of Cattle, the Inhabitants get the greatest part of their livelyhood. Its chief places are,

Dornock, a mean place, yet the See of a Bishop.

Catnes, a Maritim Town; dignified with an *Earldom*. Nigh unto this Town Southwards is *Nefs-head*, and Northwards *Dunesbe-head*, both Maritim places: and *Ginnego*.

In this Tract are three Promontories, to wit, *Urdehead*, of old *Berubium*; *Dunsby* or *Dunscanby*, of old *Virvedrum*; and *Howbum*, of old *Orcas*.

There are several *Isles* dispersed about this Kingdom of *Scotland*, as the *Orkades*, *Shetland*, and *Hebrides*, which may properly be said to belong thereunto; but as to the description thereof, they shall be treated of amongst the other small *Isles* belonging in general to great *Britain*, after we have treated of the Kingdom of *Ireland*.

Dornock.

Catnes.

Ginnego.

Three Mountains.

I R E L A N D.

IR E L A N D, environed on all sides by the *Sea*, and next to *Great Britain* may claim priority of all others in *Europe*: It is a Country generally of a fertile Soil, and plentifully stored with *Cattle*, *Fowl*, and *Fish*; but is Mountainous, Woody, Waterish, and full of unprofitable *Loughs* or *Bogs*, which oft-times prove dangerous (especially to New-comers) and occasion *Rheums* and *Fluxes*, for the cure of which they drink a sort of hot Water, called *Uskibab*.

It is blest with a mild and healthful Air, its Summer being not so hot, nor its Winter so cold as in *England*, but more inclined to foggy Mists and Rains, which makes it more unfit for Tillage than Pasturage, the Clime being not very favourable for ripening of *Corn* or *Fruits*, but beareth such great abundance of long and sweet Grass, that the Cattle (which are the Inhabitants chiefest wealth) are soon fat, and fit for slaughter therewith: And it is further observed, That the Air is so pure, that it neither breedeth nor suffereth any venomous *Beast*, *Serpent*, or *Insect*, being brought out of other Countries, long to retain their life.

Many have been the Names (according to Tradition) that this Island hath been known by; *Orpheus*, *Aristotle*, and *Claudian*, named it *Ierna*: *Juvenal* and *Mela*, *Iverna*, or *Hibernia*; *Diadorus Siculus*, *Irk*; *Eustachius*, *Oyernia* and *Bernia*; the *Britains*, *Tuerdon*; the Natives, *Eryn*; and the *English*, *Ireland*.

Some there be that will have it called *Hibernia*, from *Hybern* *tempore*, that is, from its *Winter* season; others, from *Hibern* a *Spaniard*; and others, from the ancient River *Iberus*; whilst some strive to have it so called from the *Irish* word *Hiere*, which signifieth *West*, or *Western Coast*, whence *Eryn* may seem to fetch its derivation. *Festus Avenius* calleth this Island, *Sacram Insulam*, the *Holy Island*; for that the People are soon drawn thereunto, witness the many *Saints* that it hath produced.

If you will take for truth what the *Irish* Historians report, this Island hath been exceeding long inhabited; for, according to *Cambden*, 'tis said that it was possessed by *Cesarea*, Niece to *Noah*, before the Flood; that *Bartholomaeus* a *Scythian* arrived here near 300 years before the Deluge; that many years after *Nemethus*, with his four Sons, arrived here, but was soon forced hence by the Giant-like sort of People of the *Nimrods* Race here inhabiting; that after this

Its situation.

Fertility.

Its Air and Temperature.

Its Names.

Why so called.

Ireland long ago inhabited.

this the Five Grecians seized this Island; and that soon after (being about the time of the *Israelites* departure out of *Egypt*) *Gaothel*, with his Wife *Scota*, Daughter to *Pharaoh* King of *Egypt*, landed here, and called the Island *Scotia*, from his Wifes name. And further, the *British* History saith, that some Ages after *Hiberius*, *Hermion*, *Euer*, and *Erimon*, Sons of *Milefus* King of *Spain*, by permission of *Gurguntius* the *British* King, here planted Colonies after that the Country had been wasted by a Pestilence, and from the eldest Son was called *Hibernia*. Nor is it much to be doubted, but that the *Britains* settled themselves here, seeing there is so great affinity betwixt them and the *Irish* in their natures, dispositions, and speech.

Its Extent,
Situation.

This Island contains in length about 240 miles, and in breadth about 120; 'tis situate under the 10th and 12th *Climates*, the longest day making about 16 hours. It is a near Neighbour to *Scotland*, from which it is separated by an *Isthmus* of about seven miles; but *England* far more remote, being from *Dublin*, its Metropolitan City, to *Holy-land* in the Isle of *Anglesey* (the usual place for taking of Landing) about 50.

Its Strength.

It is an Island of great strength, as well by Nature as Art, by reason of its situation in such Tempestuous and dangerous Seas, and the several Fortifications and Castles that the *English* have built since they became Masters thereof.

Its chief Ri-
vers.

It is a Country well watered, having several great Rivers, the chief amongst which are those of *Shannon*, being about 60 miles navigable, and after its course of about 200 miles, loofeth it self into the Western Ocean. *Liff*, *Showre*, *Awidaff*, *Slanie*, *Stone*, &c. And besides these Rivers there are several *Lakes* or *Loughs*, amongst which that of most note is *Lough-Erne*, about 30 miles in length, and 15 in breadth, in which are several small *Isles*.

Its Commodi-
ties.

The Commodities that this Island affordeth, are, great abundance of *Cattls*, *Hides*, *Tallow*, *Cheese*, *Wool*, of which they make coarse-Cloth, *Freezes*, *Rags*, *Mantles*, &c. also *Furs*, *Pipe-Staves*, *Salt*, *Hemp*, *Linnen-Cloth*, *Hony*, and *Wax*; and its Seas likewise afford great plenty of *Cod-fish*, *Herrings*, *Pilchards*, *Oysters*, &c.

Its Inhabitants

Its Native Inhabitants were extremely rude and barbarous; they made use of Women in common, without any difference of other mens Wives; they were very bold, courageous, and greedy of honour, constant in love, impatient of Injuries, of an easie belief, much addicted to phantastical conceits, as holding it ominous to give their Neighbours Fire on a *May-day*, with many the like Fooleries; they are much inclined to superstitious Idolatry, as worshipping the *Moon*, after her change; about their Childrens Necks they hung the beginning of *St. Johns* Gospel, a piece of *Wolves-skin*, or a crooked Nail of a *Horse-shoe*, which they thought preserved them from danger; the Hoofs of dead *Horses* they held Sacred; with many such like ridiculous Fancies. They accounted *Ease* and *Idleness* their greatest Liberty and Riches, not coveting Worldly possessions, contenting themselves with mean Cottages, Hovels, or Cabins; nor were they profuse in their Apparel or Diet, being well satisfied if they had wherewith to keep them warm, and to fill their Bellies, their chief food being *Herbs*, *Roots*, *Buster*, *Milk*, *Oatmeal*, and the like. For their dying, they hired Women to Mourn, who expostulated why they would die, telling them, that they had such and such things; and the Corps were accompanied to the Grave with howlings, clapping of hands, and such like forrowful actions. But many of these ridiculous and absurd Customs, since the *English* are settled amongst them, are forgotten.

The Christian
Faith first
planted by
St. Patrick.

The *Christian Faith* was here first planted by *St. Patrick*; this *Patrick* (according to Writers) was the Son of *Calphurnus*, by *St. Martins* Sister, and born at *Glasco* in *Scotland*, who in his Youth was taken Captive by the *Irish* Pirates, and sold for six years as a Slave in the meanest condition to *Macbuan*; yet in this dejected condition he much desired the Conversion of this Nation, from their extrem Idolatrous ways to the true serving of the living God, inasmuch that he dreamed, that the unborn *Babes* cried unto him for Baptism; and being at length redeemed from his bondage, by a piece of Gold, which he found

found in the Field, (that was rooted up by some *Swine*) he left the Isle; but still having his thoughts on these People, in his Aged years he again returned, (and in better state than before) preached the Gospel, converted the People, became Bishop of *Armagh*; and when dead, was received or canonized as their Saint.

The *English*
become Mas-
ters of Ire-
land.

These *Irish*, having civil dissentions amongst them, prompted the *English* in the Reign of *K. Henry* the Second, to attempt the Conquest of this Kingdom, who in *Anno Dom.* 1172. landed his Army there, and obtained the Regal Dominion thereof, which being passed over unto him by their Nobles and Commonalty, their Charter so signed, was transmitted to *Rome*, and was confirmed by a Patent of Pope *Hadrian*, by a Ring delivered unto him in token of his investiture; and was farther confirmed by the Authority of certain *Provincial Synods*; and ever since that time it hath remained in the possessions of the Kings of *England*.

The Temporal Government, since the *English* became Masters thereof, lieth most commonly been, by one Supreme Officer, sent over by the Kings of *England*, and called *Lord Deputy*, or *Lord Lieutenant*, who for Majesty, State, and Power, is not inferior to any *Vice-Roy* in Christendom; living in great grandure, and having ample and Royal Power and Authority granted unto him; and as Assistant unto him in so weighty a concern, he hath his *Privy Council*, being a select number of honourable and prudent persons chosen out of the Nobility, Clergy, and Capital Officers of State: for their Degrees of Honour, and Offices of State, they are the same with those of *England*, already treated of. The present *Lord Lieutenant* is the Right Noble, his Excellency *Arthur Capell*, Earl of *Essex*, Viscount *Maldon*, Baron *Capell* of *Hadham*, &c.

The Tempo-
ral Govern-
ment of Ire-
land.

The Laws of this Kingdom have correspondency with those of *England*, and have likewise there several Courts of Judicature; as the *Chancery*, *Common-Pleas*, *Kings-Bench*, *Exchequer*, &c. but above all the High Court of Parliament. There are likewise in each County Justices of the Peace, for the quiet governing and well ordering the Inhabitants, as in *England*.

Its Laws and
Courts of
Judicature.

As to the Ecclesiastical Government of this Kingdom, it is committed to the care of four Archbishops, under whom are divers *Suffragan Bishops*, whose names are as followeth. Under the Archbishop of *Armagh*, who is Primate of *Ireland*, are the Bishops of *Meath*, or *Elnamirand*, *Conuer*, *Rathluc*, *Dune*, or *Dundaletghlas*, *Ardachad*, *Derry*, *Dal-Liquin*, *Chlorcor*, or *Lagunadum*, and *Rathbot*. Under the Archbishop of *Dublin*, those of *Ferne*, *Lechlin*, *Glendalach*, *Offery*, and *Kildare*. Under the Archbishop of *Cassile*, those of *Limerick*, *Waterford*, *Corke*, *Laonie*, or *Kendalnan*, *Celumabrabh*, *Lismore*, *Ardfret*, the Isle of *Gathay*, *Clon*, *De Rosalisher*, *Melite*, or *Emilech*, and *Rosf* or *Roseree*. And under the Archbishop of *Tuam*, those of *Elphin*, *Gonany*, *Clonfred*, *Enachdun*, *Achad*, *Duac*, or *Killmacduac*, *Mage*, *Killmunduach*, *Celvaier*, *Roscomon*, and *Lade*, or *Killaleth*.

The Arch-
bishops and
Bishops.

According to the Temporal Government of this Kingdom, it is severed into four Provinces, to wit, *Leinster*, *Ulster*, *Connaugh*, and *Mounster*, which are again subdivided into several Counties, which comprehend several *Baronies*, in which are seated several Towns: And of these Provinces in order.

L E I M S T E R.

His Part of Ireland (for the generality) is of a fertile Soil, affording great plenty of Corn, Cattle, Fowl, and Fish, enjoyeth a wholesome and temperate Air, is well watered with Rivers, the chief amongst which are the *Shoun*, *Neor*, and *Burrao*, which have their rise out of that great Mountain called by *Giraldu*, *Bladine Montes*: It is very well inhabited, as well by the Gentry as the Commonalty, and the rather by reason of *Dublin*, the Metropolitan City of this Kingdom therein seated. Its form may be said to be triangular, for from South-east to the West-point, is above 80 miles; from

its fertility.

its Rivers.

thence to the North-west, about 70; and her East-Coast, about 18; the circumference making about 270 miles. And for its bounds, it hath on the West the Province of *Connaught*; on the North, that of *Leinster*; and on the East and South, the *Sea* which regards *England*, from which (that is, from *Holyhead* in the Isle of *Anglesey*) it is distant about 50 miles: a *Sea* very dangerous for Sayers, by reason of the *Flats* and *Shallows* that lie over against *Holyhead*, which are called the *Grounds*. And as to its division, it is severed into ten Counties, to wit, *Dublin*, *East-Meath*, *West-Meath*, *Longford*, *Kildare*, *Kings County*, *Queens County*, *Caterlough*, *Weixford*, and *Kilkenny*; all which are again subdivided into several *Baronies*; and of these Counties in order.

DUBLIN, or *Divelin*, a fertile County for Corn and Cattle, but ill provided with Wood, which defect is supplied by *Peat* or *Turf*, dug up in the claming places, as also by *Sea-Coal* brought from *England*. It is severed into seven *Baronies*, viz. *New-Castle*, *Upper-Cross*, *Rath-down*, *Castle-knock*, *Coolock*, *Batrudery*, and *Nether-Cross*; and by reason of its City *Dublin*, the Metropolis of *Ireland*, is very well furnished with Towns, and inhabited by Gentry. Its chief places are,

Dublin, the capital City in the Island, by *Ptolomy* called *Eblana*, by the *Latinitis*, *Dublinium*, and *Dublinia*; by the *West-Britains*, *Dinas Dulin*; and by the *Irish*, *Balacleigh*, that is, the Town upon *Hurdles*, by reason that when it began to be first built (the ground being wet and moorish) the Foundation of its Houses were laid upon *Hurdles*. It is a City of great Antiquity, and said to be built by *Harold* the first King of *Norway*, who brought most of the Kingdom under his obedience, though not without great Spoils; and after the Conquest of the *English*, was Peopled by a Colony of *Bristol-men*. It is no less pleasantly than commodiously seated on the River *Liffey*, (which after a small course emptieth itself into a capacious Bay of the *Sea*, where it hath a good Haven) and a fair prospect; and on the South it hath delightful Hills, which, with the several Parks here adjacent afford great Recreation to the Gentry. It is a City dignified and enriched with the residence of the Lord Lieutenant, as also with the See of an Archbishop, with an University, and the Courts of Judicature, by reason of which it is a place of good Traffick, being well inhabited and frequented by Nobility and Gentry, as also by abundance of wealthy Merchants and Shop-keepers. It is beautified with many fair Buildings, both public and private, the principal amongst which are the Lord Lieutenant's Palace, a stately Structure, built by order of King Henry the Second, in the East-Suburbs; then the Cathedral Church, dedicated to St. Patrick, consisting of a Dean, Chanter, Chancellor, Treasurer, two Arch-Deacons, and twenty Prebendaries: Nigh unto which is the Archbishop's Palace, both which are without the City in the Suburbs called St. Patrick's: Then the Collegiate Church consecrated to the Holy Trinity, commonly called Christ Church, seated in the midst of the City, which Queen Elizabeth dignified with the Priviledges of an University; and not far from this is the Town-Hall, called *Toles-tale*, a fair Stone-building of a quadrangular form; and here the Lord Mayor, Sheriffs, Aldermen, and other the Magistrates of the City assemble together for the management and consulting on the publick Concerns of the City; as, to hear Causes, hold Sessions, &c. Then a beautiful Colledge, with several other fair Edifices. It is at present a City of a large Extent to what it formerly was; and doth daily increase in its Buildings, especially in its Suburbs, which is severed from the City by a Wall, which gives entrance by six Gates. As touching the Trade of this Kingdom, I shall include it under this City, as being the chief place of Traffick. The Commodities exported are the product of the Country already treated of; and those imported are all sorts of *English* Commodities, especially Apparel, Silks, Stuffs, &c. also *Wines*, *Oils*, and several other Commodities. Their Coins, as being under the Jurisdiction of *England*, have correspondency therewith, and are here current, as also those of *Spain*; and an *Irish* Pound, which consisteth of 20 *s.* is but 15 *s.* sterling, which makes their Shilling but 9 *d.* sterling. And as to their Weights and Measures, they are the same with those of *England*, where see further.

Wickie,

Wickie, seated on the *Sea*, where over the narrow Haven there standeth a Rock, enclosed with a strong Wall instead of a Castle, and serveth for a place of defence.

New-Castle, a Town which regardeth the *Sea*, where there are Shelves of Sand (which they call the *Grounds*) reaching a great length, between which and the Shoar is said to be about seven Fathom water.

Houth, seated on the River *Liffy*, at its fall into the *Sea*, which almost encloseth it.

Malcheal, also seated on the *Sea*, nigh unto which is a small Isle called *Lambey*.

EAST-MEATH, a County watered with the noble River *Boyne*, which cutteth the Country into two parts, and after it hath received the Waters of *Lough-Ranmore*, dischargeth it self into the *Sea*. It is severed into twelve *Baronies*, viz. *Moyfenragh*, *Dunboyne*, *Ratoth*, *Duleeke*, *Kells*, *Morgallon*, *Skreen*, *Navan*, *Lune*, *Slane*, *Foore*, and *Decce*: And hath for its chief places,

Trim, seated on the River *Boyne*, a Town of good account and Trade.

Aboy, a well inhabited and frequented Town.

Navan, *Drodagh*, and *Slane*, which also hath a Barony.

WEST-MEATH, so called as lying Westwards, as the other is for lying Eastwards. It is divided into twelve *Baronies*, viz. *Earhill*, *Moyasbell*, *Clunlonan*, *Brawney*, *Moygoish*, *Delwin*, *Corkery*, *Demyfoore*, *Maherederon*, *Rathconrath*, *Kilkenny-west*, and *Fartullagh*: And hath for its chief places,

Molingar, the chief Shire-Town, as being commodiously seated in the midst of the County.

Delwin, seated on the Summit of a Hill, a Town dignified with a Barony: And *Kelskery*.

LONGFORD, a County almost encompassed with Lakes and Rivers; amongst which is the *Shannon*, the noblest River in the Kingdom. It is severed into six *Baronies*, viz. *Ardragh*, *Granard*, *Moydow*, *Longford*, *Rathline*, and *Abbsbrowle*: And hath for its chief places,

Longford, which gives name to the County, seated on the Lake *Eske*, or rather on the *Shannon*. *Ardragh*, another good Town.

KILDARE, a rich and fertile County, severed into ten *Baronies*, viz. *Salt*, *Nash*, *Ikeathy*, or *Oughtereney*, *Claine*, *Connet Magna*, *Carbury*, *Ophaly*, *Noragh* and *Rabane*, *Kilkullen* half, *Kikab* and *Moon*: Whose chief places are,

Kildare, a fair Inland Town, being well frequented; defended by a Castle, and dignified with the See of a Bishop: A place much celebrated in the Infancy of the *Irish* Church for its St. *Brigid* an holy Virgin, who was the Disciple of St. *Patrick*.

Mainoth, defended by a Castle, and is a place of good account; and well frequented.

Naas and *Athie*, seated on the River *Barrow*, both Towns of some account.

KINGS COUNTY, so called in honour to *Philip* King of *Spain*; Husband to *Mary* Queen of *England*. It is divided into ten *Baronies*, viz. *Cooles-Town*, *Philips-Town*, *Marrius-Town*, *Ballicowen*, *Kilcoursey*, *Balliboy*, *Clontiske*, *Garricastle*, *Ballibratt*, and *Fercalc*: And hath for its chief places,

Philips-Town, or *Kings-Town*.

QUEENS COUNTY, full of Boggs and Woods, is divided into eight *Baronies*, viz. *Balliadams*, *Upper-Ossery*, *Portnebinch*, *Tenebinch*, *Cullinagh*, *Mary-burrough*, *Slewamargh*, and *Stradbally*: And hath for its chief places,

Queens-Town, a place of good account, and is the chief in the County.

Rheban, once a City, but at present of small note.

C c 2

CATER.

County of
Caterlough de-
scribed.

Caterlough,
Leighlin.

Tullo,
Carickbrak,
Arkle,
County of
Wexford de-
scribed.

Wexford.

Ross.

Tynes.

Eniscort,
County of
Kilkenny de-
scribed.

Kilkenny.

Thomas Town,
Callan,
Religious
Houses.

CATER LOUGH, a fertile County, and well clothed with *Wood*. It is divided into five *Baronies*, viz. *Ravilly*, *Caterlough*, *Forth*, *Idronye*, and *St. Mullin* in part: And hath for its chief places, *Caterlough*, seated on the River *Barrow*, of good account and strength, *Leighlin*, also seated on the *Barrow*, once dignified with an *Episcopal See*.

Tullo, seated on the River *Slane*.
Carickbrak and *Arkle*, which two last are seated on the Sea.
WEXFORD, or **WEISFORD**, washed by the Sea; a County in former time (according to *Ptolomy*) possessed by the *Menapians*, a sort of People which came out of *Low-Germany*. It is divided into eight *Baronies*, viz. *Gory*, *Scharwalsh*, *Ballagheene*, *Bantry*, *Shelmaleere*, *Forth*, *Bargy*, and *Shelburne*. And hath for its chief places,

Wexford, supposed to be the ancient City *Menapa*, situate at the Mouth of the River *Slane*, where it hath a good Haven; a fair Town, and of note for being the first Town that embraced a Colony of *English*, as also for its *Herring-fishing*; which makes it to be well inhabited and frequented.

Ross, seated on the River *Barrow*, which after a small course falleth into a Bay or Arm of the Sea.

Tynes, situate on the *Slane*, dignified with the See of a *Bishop*, and was in former time fortified with a *Castle*.

Eniscort, a *Borough* and *Town Corporate*.

KILKENNY, a very fertile County, well graced with Towns, is divided into ten *Baronies*, viz. *Gowran*, *Fassaghading*, *Kilkenny*, *Cránagh*, *Galmey*, *Callen*, *Iverke*, *Sheelelogher*, *Kells*, *Knocktopher*, *Ida-Igrin*, and *Iarccon*. And hath for its chief places,

Kilkenny, seated on the River *Nur*, which traverseth the County; a fair and wealthy *Borough-Town*, far exceeding all other Mid-land *Borough-Towns* in the Kingdom. It is divided into the *English* and the *Irish* Town, that part belonging to the *English* being fenced on the West-side by a *Wall*, and defended by a *Castle*; and that part which belongeth to the *Irish*, (being as it were the *Suburbs*) is of the greatest Antiquity, having in it the *Canicks Church*, and is honoured with the See of the Bishop of *Offery*.

Thomas Town, seated beneath the River *Nur*, a small walled Town.

Callan, seated on a River so called; a *Borough* and *Town Corporate*.

Amongst the places in this Province set apart for Divine Worship, these following were of great note, viz. the stately *Abbey* called *Thomas Court* at *Thilshin*, built by King *Henry the Second*, in expiation of the Murder of *Thomas* Archbishop of *Canterbury*; the *Monasteries* of *St. Maries*, of *Oustmanby*, and *Tintern*; and the *Abbey* founded by *William Marshall* Earl of *Pembroke*, to the praise of God, for his safe delivery out of a desperate Storm and Shipwrack, which he was in danger of when he was returning from the Holy Land.

U L S T E R.

U L S T E R.

This Province is of a large Extent, and of a different Soil, some places being very fertile, and others as barren, which would be otherwise if it were well manured; but generally it is inclined to fertility: It hath many thick and shady *Woods*, as also divers large *Lakes*, in which are several small *Isles*; which said *Lakes* or *Loughs*, as also the *Rivers* which water the Province, plentifully furnish the Inhabitants with *Salmons*, and other good Fish: and for *Flesh*, *Fowl*, and *Corn*, they have more than they can well spend. This Province by the *Welsh-Britains* is called *Ulthw*, and by the *Irish*, *Cui Guilly*.

It is bounded on the South with the Provinces of *Leinster* and *Connaugh*, and on all other parts is washed with the Sea, which receiveth the Waters of those many *Loughs* or *Lakes*, many of which are of a large extent, and have within them several small *Isles*, the names of some are as followeth, *Lough-Neaugh*, *Lough-Foylle*, *Lough-Swillie*, *Lough-Earne*, and *Lough-Cone*.

It is of a large Extent, reaching from *Black-Abbey* in the East to *Calebgh-Point* in the West, about 130 miles; and from *Coldagh-Haven* in the North to *Kilmore* in the South, about 100; and in circumference about 420 miles.

This Province is divided into Ten Counties, viz. *Tir-conell* or *Dunagall*, *Tyreen*, *Colrane*, *Antrim*, *Downe*, *Louth*, *Armagh*, *Monaghan*, *Gavan*, and *Fermanagh*; all which are again severed into divers *Baronies*: And of these Counties in order.

TIR-CONEL, or **DUNAGAL**, a Champain Country, and well watered with *Rivers* and *Loughs*, which discharge themselves into the Sea; which washeth its Southern, Western, and Northern parts, and affords to the Inhabitants great plenty of *Fish* and *River-Fowl*. It is divided into five *Baronies*, viz. *Tirbhugh*, *Boylagh*, *Kilmaccreanan*, *Raphoe*, and *Enishowen*: And hath for its chief places,

Derry, or *London-Derry*, a Colony of the Citizens of *London*; a fair and well built Town, where sometime stood a flourishing Monastery.

Dunagall, which gives name to the County, seated on a Bay of the Sea, where it hath a good Haven, and between the Mouth of *Lough-Earne* and *Balewilly-Bay*.

Calebbeck, situate on the Sea, where it hath a commodious Haven, and *Robogh*.

Along the Coast of this County are seated several small *Isles*, viz. *Torr-Isle*, the *Isles* of *Cladagh*, *North-Aran*, &c. also the Promontories of *Fair-foreland*, *Rams-head*, and *St. Hellens-head*: And in this County is *St. Patricks Purgatory*, a Vault or narrow Cave in the ground, of which strange Fancies are believed by the simple sort of the *Irish*.

TYROEN, a large, rough, and rugged, yet fertile County, which is divided by the Mountains of *Sliew-Gallen* into the Upper and the Lower, in both which are three *Baronies*, viz. *Omagh*, *Strabane*, and *Dungannon*: And hath for its chief places,

Cloghar, dignified with the See of a *Bishop*.

Dungannon, the ancient residence of the *O-neels*.

Strabane, and *Charlemont*. In this County is the large Lake *Neaugh*, well stored with Fish, in which are several small *Isles*; the chief amongst which are *Enis-Garden*, and *Sidney-Isle*.

COLERANE, a small County, seated in the most Northern part of the Province, and washed with the Sea, as also with the large Lake *Foylle*, adjoining to the Sea on its Western part, and watered with the River *Band* on its Eastern, which carrieth a proud stream into the Sea from the Lake *Neaugh*, which breedeth great store of excellent *Salmons*. The chief places in this County are,

Its tempera-
ture of Soil.

Its Lakes and
Rivers.

Its Name.

Its Bounds.

Its Extent.

Division.

County of
Tir-conel de-
scribed.

Derry.

Dunagall.

Calebbeck.

Several Isles
and Promon-
tories along
the Coast.
St. Patricks
Purgatory.

County of
Tyroen de-
scribed.

Cloghar.

Dungannon.

Strabane.

Charlemont.

County of
Colrane de-
scribed.

Colerane.

Colerane,
Banchor,
Kilrough,
County of
Antrim de-
scribed.

Colerane, which gives name to the County, seated on the River *Band*.
Banchor, and *Kilrough*.

ANTRIM, the nearest County to *Scotland*, from which it is not far distant, being almost encircled with Waters, having on the West the River *Band*, on the South the large Lough *Neagh* and *Knock-fergus-Bay*, and on all other parts the *Sea*, where along the Shoar are several very small *Isles*, except it be one, to wit, the *Raglins*, which is indifferent large. This County is severed into eight *Baronies*, viz. *Toome*, *Antrim*, *Kilconway*, *Masfereene*, *Belfast*, *Dunluce*, *Glenarne*, and *Garie*: And hath for its chief places,

Knock-fergus.

Knock-fergus, by the *Irish*, *Carick-fergus*, that is, the Rock of *Fergus*, seated on a large Bay so called, where it hath a commodious Port. It is a place of good strength, is well inhabited, and better frequented than other places on this Coast; and at the Mouth of this Bay lie several *Isles*. Not far from this place once stood the famous Monastery of *Magio*, so much commended by *Bede*.

Antrim.
Glastalagne.
County of
Down de-
scribed.

Antrim, seated on a small River, at its influx into the Lake *Neagh*.
Glastalagne, situate on the *Band*.

DOWNE, a large and fertile County, washed on the East with the *Sea*, where it thrusteth it self forth with a large Creek or Arm into the Lough *Cone*, which extendeth it self in length many miles, and formeth two By-lands; That Southwards called *Lecall*, which is exceeding fertile, and whose extreame point is called *St. Johns Foreland*; and That Northwards called *Ardes*: It is severed into five *Baronies*, viz. *Kinalearty*, *Lower Evagh*, *Ards*, *Upper Evagh*, and *Lecale*: And hath for its chief places,

Downe.

Downe, of old *Dunum*, seated in the part called *Lecall*, near the Lough *Cone*; a Town of good Antiquity, and dignified with an *Episcopal See*, as also with the Tombs of *St. Patrick*, *St. Bridget*, and *St. Columbe*.

Newry.
Stranford.

Newry, seated on a River which falleth into *Carlingford-haven*.

Stranford, seated on the large River *Coyne*, or rather an Arm of the *Sea*, where it hath a safe Harbour.

Arglas.
Conner.
Kilwarney.
County of
Louth de-
scribed.

Arglas, where (as 'tis said) *St. Patrick* founded a Church.
Conner, or *Conereth*; an *Episcopal See*.

Kilwarney, much annoyed with Bogs, and full of shady Woods.

LOUTH, a County of a fertile Soil, very grateful to the Husbandman, and is washed on the East with the *Sea*. It is divided into four *Baronies*, viz. *Lough*, *Dundalke*, *Ferrard*, and *Atherdee*: And hath for its chief places,

Tredaugh.

Tredaugh, or *Droughdagh*, seated near the Mouth of the *Boyne*, which divideth it, but joyned together by a Bridge; and by reason of its commodious Haven it is a good Town, being well inhabited and frequented; nigh unto which stood *Mellifont Abbey*, founded by *Donald a K. of Uriel*.

Dundalke.

Dundalke, seated on the *Sea*, where it hath a commodious Haven, and in former times was strengthened with a *Castle*, which with the Town was burnt by *Edward Brus*, Brother to the King of *Scots*, who proclaimed himself King of *Ireland*; but for this good act, was soon after (with above 8000 of his Men) slain; not far distant.

Carlingford.
Lough.
Ardeh.
County of
Armagh de-
scribed.

Carlingford, another good and well frequented *Port-Town*.

Lough, a fair Town, conveniently seated on the River *Warren*.
Ardeh, a good Inland dry Town.

ARMAGH, a County of an exceeding fertile Soil, and yet inferior to any in the Kingdom. It is severed into five *Baronies*, viz. *Powes*, *Orryor*, *Tawaine*, *Onelan*, and *Armagh*: And hath for its chief places,

Armagh.

Armagh, seated on (or near) the River *Kaisin*, an ancient (but ruined) City, yet dignified with the See of an *Archbishop*, who is *Primate* of all *Ireland*; which name it is said to receive from Queen *Armach*; and is supposed to be the same which *Ptolomy* calleth *Dearmacb*. And here (according to *St. Bernard*) *St. Patrick* the Apostle of the *Irish* ruled, during his life, and when he departed this World, was here Interr'd, in honour of whom it was a place greatly revered.

Not

Not far from *Armagh* is *Owen Maugh*, the ancient Seat of the Kings of *Ulster*; and on the River *Blackwater* are two Forts, one which beareth the same name, and the other called *Fort Charles*.

Mount Norris, another Fort: And *Dornous*.

MONOGHAN, a County very hilly, and well clothed with *Wood*, is severed into four *Baronies*, viz. *Monaghan*, *Trough*, *Bartrey*, and *Cremorne*: And hath for its chief places,

Clogher, seated on the River *Blackwater*.

Monaghan, a large Fort; *Churchland*, and *Lishanahan*.

CAVAN, a small County, and of less account, yet is divided into seven *Baronies*, viz. *Cloneby*, *Tulloghgarvy*, *Casteraban*, *Clounmoghan*, *Tullabagh*, *Tullabonoho*, and *Loughsee*. And hath for its chief places,

Cavan, and *Kilmore*, the one seated on the Lake *Cane*, the other on the Lake *Missey*, both which are joynted to the Lake *Earne*, by the River *Blackwater*.

FERMANAGH, a County well clothed with *Wood*, and very boggy in the midst, having several *Lakes* or *Loughs*, the chief amongst which is that of *Earne*, which is the largest and most famous in all the Kingdom, having therein seated divers small *Isles*; and in this *Lough* are such great store of *Salmon*, *Trouts*, and other Fish, that they are oft-times found troublesome to the Fishermen, by breaking their Nets. This County is severed into three *Baronies*, viz. *Magherestrophana*, *Maghereboy*, and *Clanawly*. And hath for its chief places,

Bal-Tarbit, seated on the same Lake.

Inis Kiling, the principal Fort in this Tract, which in *Anno 1593*. was defended by the Rebels, but taken from them by the valiant Captain *Dowdall*: and near unto this place is a great downfall of water, called the *Salmon-leap*.

Owen-Maugh B.

Mount Norris,
Dornous.
County of
Monaghan de-
scribed.

Clogher.
Monaghan.

County of
Cavan de-
scribed.

Cavan, and
Kilmore.

County of
Fermanagh
described.

Bal-tarbit.
Inis Kiling.

CONNAUGH.

THIS Province, called by the *Irish* *Conaughty*, is full of *Woods* and *Bogs*, yet not unfertile, nor wanting in Provisions. In this Province, at *Knockint*, that is, the *Hill of Axes*, the greatest rabble of Rebels that ever were seen together in the Kingdom, were gathered together, and commanded by *William Burk O'Brien*, *O-Carrol*, and *Mac-nemare*, grand Rebels in that time, but were discomfited by the noble Valour of *Girald Fitz-Girald*, Earl of *Kildare*, and his party. And about the Year 1316. upon the occasion of two *Princes* or *Lords* falling at odds, there were said to be slain on both sides about 4000 Men, and so great misery came amongst them through Famine, (being forced to eat one another) and other calamities, that of about 10000 there were left alive not above 300.

This Province hath for its Eastern Bounds, *Leinster*; for its Southern, *Monaghan*; for its Northern, *Caffer*; and for its Western, the *Sea*, where it hath many commodious *Bays*, *Creeks*, and Navigable *Rivers*.

Its Extent from *Bromen* in the East to *Burrug-Bay* in the West (being the breadth) is about 80 miles; and from the River *Shannon* in the South to *Enniskilling* in the North (being the length) is about 120; and in circumference about 400 miles; and for its division is parted into six Counties, viz. *Mayo*, *Slego*, *Gallogway*, *Charax*, *Tawmond*, and *Letrym*; all which are subdivided into several *Baronies*, as hereafter shall be named: And of these in order.

MAYO, a pleasant and fertile County, stored with *Cattle*, *Deer*, *Hawks*, and *Hoy*, and well watered with the two large Loughs of *Meske*, and *Garogh*, in which are several *Isles*, which with the *Rivers* that fall into the *Sea*, where are seated several *Isles*; the Inhabitants are plentifully supplied with *Fish* and *Fowl*. It is severed into nine *Baronies*, viz. *Tirrawly*, *Eris*, *Gallin*, *Coragh*, *Burishoole*, *Muriske*, *Kilmaine*, *Clonmoris*, and *Castello*; And hath for its chief places,

Full of Bogs,
and Woods.

Its Bounds.

Its Extent.

County of
Mayo de-
scribed.

Killaloy,

Kilaloe.

Kilaloe, dignified with an *Episcopal See*, which formerly was at *Mayo*, where (according to *Bede*) there was a Monastery for 30 *English men*, built by an *Irish Bishop*; and was in a flourishing condition in the Reign of King *John*.

Refraine,
Stackby,
County of
Slego de-
scribed.

Refraine and *Stackby*, both seated on the Sea-shore.
S L E G O, a County full of rich Pastures, which breed and fatten store of Cattle, and is well watered with the *Sea*, and the *Lough Erne* already treated of. It is divided into six *Baronies*; viz. *Carbury*, *Corran*, *Leng*, *Tirrarill*, *Tirreragh*, and *Coolavin*. And hath for its chief places,

Slego.

Slego, seated on a Bay of the Sea so called, where it hath a commodious Road for Ships, and is defended by a *Castle*.

Dundroes,
Dunbroyle,
County of
Galloway
described.

Dundroes and *Dunbroyle*, both Maritim-Towns.

G A L L O W A Y, a large and fertile County both for Tillage and Pasturage, whose Western part is washed with the *Sea*, which thrusteth forth several Arms, and hath lying on its Shoars divers Isles, of which the three largest (which bear the name of *Aras*) are *Great-Island*, *Ifor-Island*, *Small-Island*, all seated in the Mouth of *Galloway-Bay*. It is separated into fifteen *Baronies*, viz. *Moycullin*, *Ballinanahan*, *Clare*, *Downamore*, *Bealmo*, *Killebane*, *Kilconet*, *Clanemacdonene*, *Longford*, *Tiaquin*, *Athenry*, *Dunkillin*, *Kilcartan*, *Lough-Reagh*, and *Letrim*. And hath for its chief places,

Galloway.

Galloway, a fair, large, and strong City, dignified with an *Episcopal See*, and is commodiously seated for Traffick on a spacious Bay of the Sea so called, by reason whereof it is well inhabited, frequented, and enjoyeth a good Trade. Nigh unto this City is the *Lough Carble* or *Carbles*, about 20 miles in length, and 3 or 4 in breadth, in which are abundance of small Isles.

Inis-Ceath,
Inis-Bovind,
Aterith,
Clan-Ricard,
Kilmaculo and
Clonfert,
County of
Clare de-
scribed.

Inis-Ceath, a place in times past well known for its Monastery.
Inis-Bovind, which *Bede* calleth *White-Castle-Isle*.

Aterith, or *Athenry*, once a place of good strength. *Clan-Ricard*, *Kilmaculo*, and *Clonfert*.

C L A R E, or *T W O M O N D*, a County shooting it self far into the Sea towards the West, with a tapered Promontory, which with the River *Shannon*, and the *Lough Derg* (both full of small Isles) doth almost encompass it. It is a Country well provided of all things necessary for the sustenance of Man, is severed into nine *Baronies*, viz. *Burrins*, *Concomroe*, *Ibrickam*, *Inchiquin*, *Islands*, *Glanderagh*, *Moyfertagh*, *Bounraty*, and *Tullogh*. And hath for its chief places,

Clare.

Clare, seated on a Creek which floweth out of the *Shannon*.

Kylaloe.

Kylaloe, seated on the *Shannon* near the *Lough Derg*, dignified with an *Episcopal See*.

Kilsennrag,
Bunraty,
County of
Roscomon de-
scribed.

Kilsennrag and *Bunraty*, not far from the *Shannon*; a Town of some account.

R O S C O M O N, a long but narrow County, of a very fertile Soil, and breedeth store of Cattle; but Northwards, where the *Curlew Mountains* are, it is inclined to sterility. It is divided into seven *Baronies*, viz. *Roscomon*, *Boyle*, *Bealanisoo*, East and West *Ballinaber*, *Athlone*, and *Moycarne*. And hath for its chief places,

Roscomon.

Roscomon, seated near the *Lough Ree*, once a place of good account and strength.

Elphen.

Elphen, honoured with the See of a *Bishop*.

Athlone.

Athlone, situate on the *Lough Ree*, defended by a *Castle*, and beautified with a fair *Stone-Bridge*. And under the *Curlew Hills* in former time was a famous *Abby*, together with the *Abby of Beaitude*.

County of
Letrim de-
scribed.

L E T R I M, a hilly County, yet very fit for raising of Cattle, which are here in great abundance. It is severed into five *Baronies*, viz. *Drumabeire*, *Rosdogher*, *Corrigallin*, and *Moyhill*. And hath for its principal places,

Letrim,
Menkerk.

Letrim, seated in a fertile Soil, near the *Lough Alyn*, and *Menkerk*.

MUN-

MUNSTER.

THis Province in *Irish* called *Mown*, and in Latin, *Momonis*, is Mountainous, Woody, and of a different Soil, but for the generality very fertile, and abounding in Corn, Cattle, Fowl, and Fish; and the rather as being so well watered with Rivers and Bays, which lose themselves in the Sea, which almost encompasseth it, except towards the East and North, where it butteth upon the Provinces of *Leinster* and *Connaught*; which said Bays afford good Harbours for Shipping, the chief amongst which being those of *Bantry*, *Mare*, *Dingle*, and *Sennon*: And along the Shoar are seated abundance of small Isles.

Its Situation
described.

It is of a large extent, being from *Waterford-Haven* in the East to *Feriter-Haven* in the West, about 100 miles; and from *Baltimore-Bay* in the South to *Galloway-Bay* in the North, about 90; and in circumference, tracing its many Promontories and Indents, above 500 miles.

Extent.

And as to its Temporal Government, it is at present severed into six Counties, viz. *Limerick*, *Tipperary*, or *Holy-Cross*, *Kerry*, *Cork*, *Desmond*, and *Waterford*; all which are subdivided into several *Baronies*, as shall be treated of as they come in order; and first with *Limerick*.

Division.

L I M E R I C K, a fertile and well inhabited County, is severed into eleven *Baronies*, viz. *Abbey-Outheney-boy*, *Limerick-Liberty*, *Clan-Williams*, *Small-County*, *Cosma*, *Coshea*, *Killmallock*, *Poblebria*, *Kenry*, *Guonagh*, and *Connelser*. And hath for its chief places,

County of
Limerick
described.

Limerick, in *Irish*, *Loumeagh*, the chief City in the Province, seated in an Isle, so made by the River *Shannon*, which after 60 miles course loseth it self in the Sea; and by reason of its commodious situation, the River being Navigable to the very City, makes it to be a place well inhabited and frequented, is graced with good built Houses, beautified with a Cathedral Church, and a fair *Stone-Bridge*, is honoured with the See of a *Bishop*, and is strongly fortified with a *Castle*, and begirt with a *Wall*.

Limerick.

Kill-Mallo, a well inhabited Town, which is also begirt with a *Wall*.

Kilmallo.

Adare, seated on the *Shannon*, once a Town of good account: And *Clan-William*.

Adare.

T I P P E R A R Y, or **H O L Y C R O S S**, more fertile in its Southern parts than elsewhere, is divided into twelve *Baronies*, viz. *Slevaragh* and *Compsey*, *Kilmama*, *Akerin*, *Iffa* and *Offa*, *Uigurty*, *Middle-third*, *Owney* and *Avra*, *Clan-Williams*, *Neagh*, *Kilnelougurty*, *Upper-Ormond* and *Lower-Ormond*; and hath for its principal places,

County of
Tipperary, or
Holy-Cross de-
scribed.

Cassile, seated on the *Shower*, and dignified with an *Archiepiscopal See*, by *Eugenius* the Third, Bishop of *Rome*.

Cassile.

Holy-Cross, seated on the River *Shower* or *Swire*, once a place of good account and note for its famous *Abby*, which was well frequented by *Pilgrims*, and other devout persons, who came to see and worship a piece (as was generally supposed) of the *Holy-Cross*, from whence the Country adjoining is generally called County of the *Holy-Cross* of *Tipperary*.

Holy-Cross.

Emelty, dignified with the See of a *Bishop*; once a place of good account, and well inhabited and frequented.

Emelty.

Clonel, seated on the River *Shower*, a well frequented Town.

Clonel.

Carick-Mac-Griffin, situate on a Rock. *Thurles* and *Tipperary*.

Carick-Mac-Griffin,
Thurles, and
Tipperary.

The North part of this County (which is very hilly, and not over fertile) beareth the name of *Ormond*, and is honoured in giving Title to his Grace *James Butler*, Duke, Marquess, and Earl of *Ormond*, Earl of *Brecknock* and *Osery*; Viscount *Thurles*, Baron of *Arklow* and *Lanthyony*, Lord Steward of his Majesties Household, Knight of the Garter, and one of the Lords of his Majesties most Honourable Privy Council, &c.

D d

KERRY,

County of
Kerry de-
scribed.

Dingle.

Ardart.
Traley.
County of
Desmond
described.

Donekyran.
Ardes.
Downbay.
County of
Corke de-
scribed.

Corke.

Kinsale.

Ross.

Togball.

County of
Waterford
described.

Waterford.

Dungarvan.

Ardmore.
Lismore.

Divers small
Isles in the
British Sea.

K E R R T, a County watered with the Sea, where it thrusteth forth a large Bay called *Dingley-Bay*, and hath on its Shoar divers small Isles. It is very Mountainous and Woody, but interlaced with fertile Valleys. 'Tis divided into eight Baronies, viz. *Glaneroughty*, *Iveragh*, *Dunkerrone*, *Moygunnyhy*, *Trugbanackme*, *Corkaguiny*, *Iraghticonnor*, and *Clanmorris*; And hath for its chief places,

Dingle, which hath a commodious Port, on the other side of which is *Smerrick-Sound*, a good Road for Ships.

Ardart, a place of mean account, although the See of a Bishop; and *Traley*.
D E S M O N D, a Mountainous County, and well washed with the Sea, which thrusteth forth its Arms a good way into the Land, and forms three Promontories, viz. first that of *Braugh*, lying between *Baltimore* and *Bantry*, a Bay sufficiently well known for the great store of *Herrings* heretaken. Secondly, that of *Beare*, being enclosed between the Bays of *Maire* and *Dingle*. It hath for its chief places,

Donekyran, defended by a Castle: *Ardes*, and *Downbay*.
C O R K E, a large County, lying on the Sea, where it hath good Roads and Ports for Ships. It is severed into fifteen Baronies, viz. *Duhalla*, *Condansan*, *Clangishon*, *Omerry*, and *Killmare*, *Fermoy*, *Imokillize*, *Barrimore*, *Corke*, *Coutsey*, *Kinsale*, *Barrincoe*, *Ibawne*, *Beare* and *Bantry*, *Musberry*, *Carbury*, and *Bantry*. And hath for its chief places,

Corke, the chief City in the Province, dignified with the See of a Bishop, commodiously seated on a Bay of the Sea, where it hath a good Haven, a region of which it is a place well inhabited, and frequented by Merchants and Tradesmen, who drive a good Trade; and is a place of some strength, being begirt with a Wall, besides a River, over which it hath a Bridge.
Kinsale, seated at the Mouth of the River *Bany*, where it hath a good Port and is a place well fortified.

Ross, seated on the *Seashoan*, once of good account, when it had a good Road and Port, which now is barred up.
Togball, fortified with a Wall, and situate on the River *Broadwater*, at its influx into the Sea, where it hath a good Haven, which makes it to be well inhabited, and to enjoy some Trade.

W A T E R F O R D, a pleasant and fertile County, washed with the Sea, divided into seven Baronies, viz. *Deeceis*, *Gualtier*, *Cashmore* and *Cashbridge*, *Middle-third*, *Upper-third*, *Glamhery*, and *Waterford-Liberty*. And hath for its chief places,

Waterford, by the Britains and Irish called *Porabharay*, said to be built by certain Pirates of Norway, seated on the River *Shorey*, on which it hath a commodious and capacious Port, where about a 1000 Sail of Ships may safely ride at Anchor: It is a fair and well inhabited City, enjoyeth a good Trade, dignified with the See of a Bishop, and is esteemed the second place of the whole Kingdom.

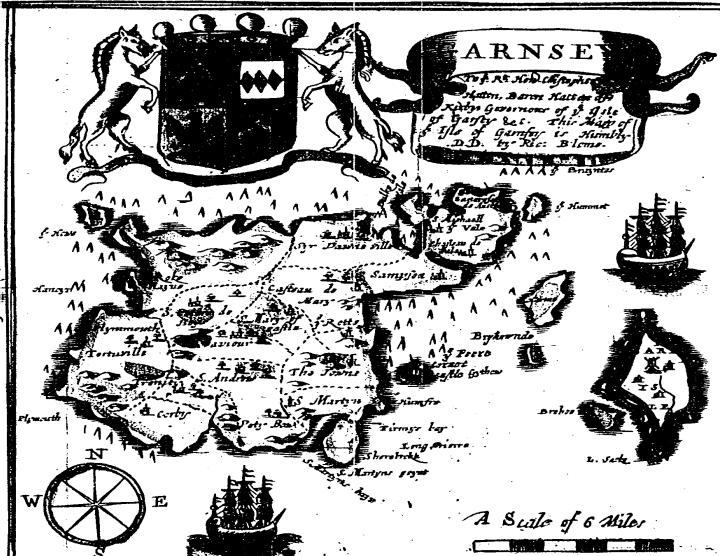
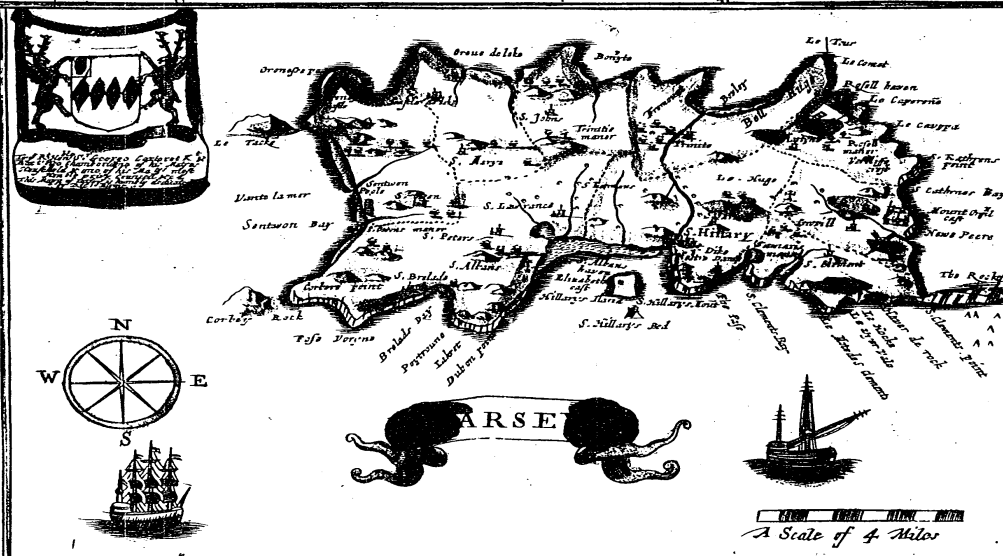
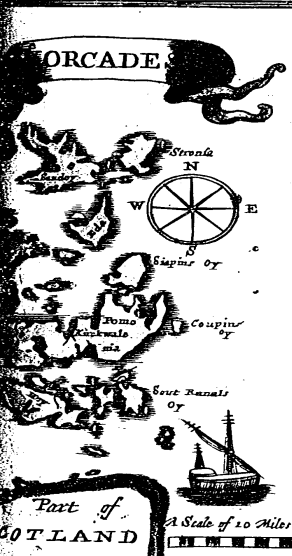
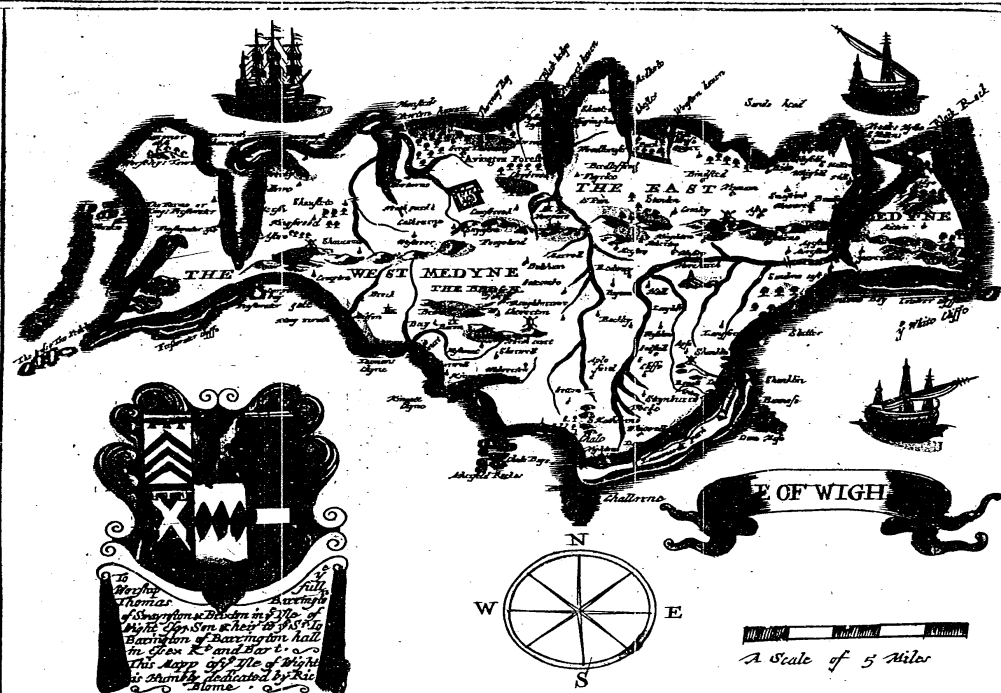
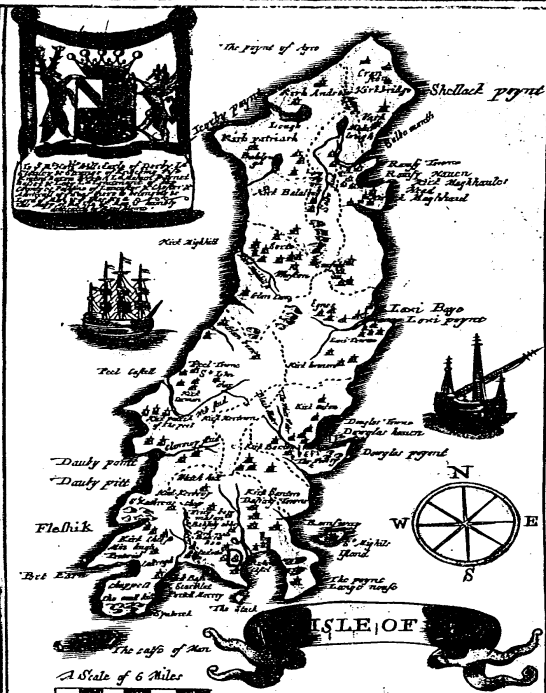
Dungarvan, a well fortified Town on the Sea-shoar, where it hath a good Road for Ships, which makes it to be of some account.

Ardmore, also seated on the Sea-shoar.

Lismore, a place of some note.

And thus much for the Description of *Ireland*; besides which, and *Great Britain*, there are a vast number of lesser Isles, which may be comprehended under the denomination of the *British Isles*, and may be considered under four sorts or heads; viz. the *Oraniers*, the *Hebrides*, the *Ioninges*, and the Isles of *Scilly*, with those of the *Spanish*. And of these in order.

**MAPP OF THE ISLES
WIGHT, LARSEY, GARNSEY,
RKE, MAN, ORCADES,
D SHETLAND. BY RIC:
Blome. by his
Ma^{ty} Comand.**



THE ORCADES, or ISLES of ORKNEY, are in number 32, and situate against the Northern Cape of Scotland, from which it is separated by a narrow Streight. In *Solinus* his time they were uninhabited, and overgrown with sleggy or rushy Weeds, and at present they are not over-crowded with People, as not being very commodious to dwell in, being very cold, destitute of Woods, and unfit to bear *Wheat*, so that instead of Bread-corn they make use of dried *Stock-fish*, which they beat to powder. And these Isles, according to *Tacitus*, are said to be first discovered by *Julius Agricola*, when he sailed round Britain with his Fleet, at which time he brought them under his subjection: After that, according to *Ninnius*, *Oetha*, and *Ebissus*, Saxons (who served under the Britains) sailed about the *Pitts* Country with 40 Sail of *Cyules*, that is, *Flyboats*, or *roaving Pinnaces*, and sorely wasted these Isles: Soon after this they fell into the hands of the *Norwegians*, who kept the possession thereof until the Year 1266, at which time the Scots waging War with them, *Magnus*, the Fourth of that name (then King of Norway) was constrained to surrender them up again upon composition unto *Alexander* the Third, King of the Scots, which was afterwards confirmed by King *Haquin*: And in Anno 1498, *Christian* the First, King of Norway and Denmark, upon the Marriage of his Daughter to *James* the Third, King of the Scots, renounced all his Right for himself and his Successors thereunto.

Isles of Orkney, when first discovered, and how subdued.

And the People that inhabit these Isles, as well in Language as Behaviour, resemble much of the *wild Irish*, and are called *Redshanks*, a sort of People utterly rude and barbarous. The chief of these Isles are as followeth:

Its People.

P O M O N I A, by *Solinus* called *Pomona Diutina*, and by the Inhabitants *Mainland*, for that it is far larger than all the rest, being about 26 miles in length, and 6 in breadth; an Isle well stored with *Lead* and *Tin*, is indifferently inhabited, and hath for its chief Town,

Pomenia.

Kirke-wale, a large Town, dignified with an *Episcopal See*, is fortified with two Castles; and for Divine Worship hath 12 Churches, one of which, to wit its Cathedral, is a fair Structure.

Kirkwale.

H O T, indifferent large, having several Towns; *Souna*, *Flotta*, *South-Ranals*, *Burna*, *Siapins*, *Eglis*, *Roous*, *Wester*, *Papa*, *Fana*, *Heth*, or *Eda*, *Streoms*, *Sand-Isle*, and *North-Ranals*, with divers others of less note, and not worth the naming.

Hoy, with other Isles.

The ISLES of **S H E T L A N D**, by some (though falsely) esteemed the *Thule* of the Ancients, and by the Commentator upon *Honace*, the *Fortunate Island*, where (according to the fabulous Opinion of *Tzetzes*) the Souls of good men are Ferried over into those *Elysian Fields*, which are always clothed in their Summer-Livery; but the mistake is very gross, for on the contrary, this Isle lying in the Latitude of 63 degrees, is extremely Cold, and the greatest part of the Year pestered with *Ice* and *Snow*; and the more, as lying on every side open to the bitter Storms of the Northern Ocean.

Shetland Isles.

The **H E B R I D E S**, **H E B U D E S**, or Western Isles, as seated Westwards of Scotland, are about 44 in number, and for the generality are plentifully provided with *Corn*, *Woods*, *Sheep*, *Salmons*, *Herrings*, and other *Fish*, as also with *Fowl*, *Deer*, and *Conies*. And for the People (according to *Solinus*) they are said to be uncivil, ignorant of Religion, Arts, and Literature, contenting themselves in a mean condition, for Food, Rayment, or Habitation; and all these Isles were anciently ruled by a King of their own, which was not by succession, but election; and to that end their Kings were prohibited to marry, but were permitted to enjoy other mens Wives, which he fancied, when, and as long as he pleased. And 'tis said, that in the other part of Scotland (according to ancient Custom) the Virginity of all New-married Wives were the Landlords due, until such time that King *Malcolm* made a Law, that half a Mark should be paid for redemption. It seemeth Maiden-heads in these parts were then of no great value, for a Mark Scotch is little above a *Shilling English*. The chief of these Isles are,

Isle of Hebrides described.

Lewis-Isle.

LEWIS, or **LEVISA**, the largest of all these Isles, being about 60 miles in length and 30 in breadth; an Isle full of steep, craggy, and stony Hills, not over-thronged with Inhabitants, but hath several small Towns.

Skye-Isle.

SKYE, adjoining to the Sea-Coast of Scotland, almost as large as Lewis, hath several Inlets of the Sea, is Hilly and Barren: And hath for its chief places,

Tanternessca.

Tanternessca, seated on the Sea-shoar, before which lieth a small Isle.

Dunbegan.

Dunbegan, seated on a Creek or Arm of the Sea, and **Dunskaca**.

Dunskaca.

Eust-Isle.

EUST, an Isle (or rather Isles) of a long, but narrow extent, in which are seated several small Towns. And near unto the Southern part of this Isle lie several small ones, the chief amongst which is **Barray**.

Mula-Isle.

MULA, by **Ptolomy** called **Maleos**, about 28 miles long, and 20 broad, is seated near unto the County of **Lorne** in Scotland, from which it is severed by an Arm of the Sea, where are such abundance of small Isles, that the passage is almost choaked up. It is an Isle (as all the rest) hilly, and not over fertile, but affords good store of **Fish** and **Fowl**, and hath Mines of **Lead** and **Tin**. Its chief places are,

Arroisca.

Arroisca, situate on the Sea-shoar, which regardeth the County of **Laquebra** in Scotland.

Dover-Castle.

Dover-Castle, also situate towards the Coast of Scotland Eastwards.

Ila-Isle.

ILA, of old **EPIDITUM**, of about 24 miles in length, and 16 in breadth, almost divided into two parts by Inlets of the Sea. It is plentifully stored with **Cattle** and Herds of **Red-Deer**, and its Land, which is of a Champain and fertile Soil, beareth good **Corn**, and participating something with the quality of **Ireland**, from which it is not far distant. In this Isle are seated several Towns, amongst which are **Guelwal**, **Kylmany**, and **Dunweg**.

Sura-Isle.

SURA, a small Isle, lying between **Ila** and Scotland, where, at **Sodre**, formerly the Seat of a Bishop, who had Jurisdiction over all these Isles, stood a **Monastery** famous for the Tombs of the **Scotish Kings**, and the frequent recourse of Holy men thereunto; amongst whom **Columbe**, the Apostle of the **Picts**, was of chief note, and from whose **Cell** the Isle is also called **Columb-Kill**.

Arran-Isle.

ARRAN, which **Antonius** calleth **Glotta**, is an Isle seated in the **Dunbartain-Firth**, between the Counties of **Cantyr**, **Argile**, **Kyle**, and **Galloway**. It hath for its chief places,

Arran, Brydyk.

Arran, seated on a Bay of the Sea; **Brydyk**, and **Glenkill**.

Glenkill.

All the rest of the Isles, comprehended under the name of the **Hebrides**, are very small and inconsiderable, being either stony, very barren, or else inaccessible, by reason of the craggy Cliffs; wherefore I shall omit the naming of them.

The Isles of Scilly.

THE ISLES of **SCILLY**, by the Dutch called the **Sorkings**, and by the ancient **Greeks** the **Heperides** and **Cassiterides**, are situate against the most Western Cape of **Cornwall**, from which they are about 24 miles distant, and are about 14 in number; all being plentifully stored with **Coney**s, **Cranes**, **Herons**, and other wild **Fowl**, which breed in the craggy Cliffs and Hills, and some of them fertile in Grain. Amongst these Isles, these following are of chief note:

Scilly.

SCILLY, which communicates its name to the rest of the Isles; **Armagh**, **Agnes**, **Sampson**, **Bresan**, **Rusco**, **St. Hellens**, **St. Martins**, **Arthur**, and **St. Maries**, the largest and most fertile of all both for **Corn** and **Pastures**, is about eight miles in circuit; is strengthened with a **Castle**, called **Stella Maria**, built by **Queen Elizabeth**; and hath a large and commodious Harbour for Ships.

Under the Name of the **SPORADES**, may be comprehended several ISLES, which are dispersed about the **British Seas**. And first the Isle of **MAN**,

MAN;

MAN, an Island situate in that part of the **British Ocean**, which is called **St. Georges Channel**, and lieth between the Kingdoms of **England**, **Scotland**, and **Ireland**, to wit, South of **Scotland**, West of **England**, and East of **Ireland**; from all which it is not so far distant, but that in a clear day, on the top of **Sceaful-Hill** (which is in the midst of the Isle) all the three Kingdoms may easily be seen.

This Isle by **Ptolomy** was called **Moneda**; by **Pliny**, **Monabia**; by the **Britains**, **Menow**; by the **English**, **Man**; and by the Inhabitants, **Maninge**.

The Air is sharp, but healthful, and subject to high Winds; yet the Frosts are short, and the Snow lieth not long in the Valleys. The Soil is reasonable fruitful (yet very Mountainous) affording good store of **Wheat** and other Grain, especially **Oats**, of which the Inhabitants make their Bread; and its Pastures feed good Flocks of **Sheep**, and Herds of **Cattle**, which for smallness resemble those of the ancient **Irish** breed. Here are great store of **Fowl** of sundry sorts, especially in the Isle of **Calf**, a very small spot, seated in the South-part towards **Anglesey**, where there are also abundance of **Puffins**, a certain **Sea-Fowl** that breeds in **Cony-holes**, and are chiefly useful for their **Feathers**, and the Oil made of them; yet their **Flesh**, if pickled or salted, comes little short of **Anchova's**, by reason of their Fish-like taste. Here are also **Red-Deer**, a abundance of **Coney**s, and in its fresh-water Rivers and Sea-Coast, are taken store of **Fish**.

It produceth **Fl Hemp** and **Flax** in great plenty; also **Wool**, **Hides**, **Tallow**, **Goats-skins**, **Lead-Oar**, **Herrings** in small quantities, and **Corn**, when they are assured that there is enough to serve themselves.

The Inhabitants do not much addict themselves to Traffick, only contenting themselves in way of Barter for such Necessaries as they have, most occasion for, as **Iron**, **Salt**, **Pitch**, **Tar**, and the like; and for support of this their small Trade, they make choice of certain Merchants, which are chosen by the Inhabitants at the **Tinewald-Court**, and accordingly are sworn by the **Deemsters** or **Judges** to deal uprightly, and for the profit of the Inhabitants. And these Merchants are the only persons that do negotiate with such as bring Commodities unto them in way of Barter; and what Bargains the said Merchants make, the Inhabitants are obliged to stand unto; and the said Commodities so taken in Truck, are equally distributed to every one according to the Goods he parted with.

The form of this Isle is long and narrow, being about 30 miles in length, and about 9 in breadth, where broadest.

It is very destitute of **Wood**, which makes the Inhabitants use **Turf** and **Peat** for their Firing.

It is generally an High-land on the Sea-Coast, and guarded with Rocks, at a farther distance than the **Low-water-mark**.

The Inhabitants were anciently the **Hebrides** or **Highlanders**, which is apparent by their Language; and before Christianity had footing here, were very rude and barbarous; but at present they are a civil and laborious People, no ways voluptuous in their Diet, nor costly in their Apparels or Habitations; they are very Religious, and neglect not the Church, yet (as all People) they are inclined to **Venery**; Contentions and Strifes they are not much addicted unto, living in Amity together; and for Recreation, they are so much addicted to the musick of the **Violin**, that there is scarce any Family but is provided therewith.

As to the Government for Spiritual Affairs, it hath a **Bishop**, who at present is the Right Reverend **Dr. Henry Bridgman**, and is called Lord Bishop of **Sodor**; and for Temporal Affairs, a **Lieutenant**, or **Governour**, with two **Deemsters** or **Judges**, a **Controller**, a **Clerk of the Rolls**, a **Receiver**, a **Water-Bailiff**, an **Attorney-General**, and other Officers. And to their further assistance (as occasion requireth for the deciding of Controversies, &c.) are usually called the 24 **Keys** of the Isle, especially once every year, to wit, upon **Midsummer-day** at **St. Johns Chapel** to the **Tinewald-Court**, where (upon a Hill adjoining to the said Chapel) the Inhabitants of the Isle, being there assembled, hear the Laws and

Isle of Man.

Its Situation.

Its Names.

Its Air, temperature, and fertility.

Isle of calf.

Its Trade and Commodities.

Its Form.

Its Inhabitants.

The Government.

and Ordinances agreed upon before in the *Chapel*, which is performed with no small ceremony and pomp, especially if the Lord of the Isle be present, who is seated on a Chair of State, with a Canopy over his head, and attended by his Barons, *viz.* the *Bishop*, the *Deemsters*, the *Gentry*, and the *Womanry*. The present Lord of the Isle (who is called *King in Man*) is the Right Honourable *Charles Stanley*, Earl of *Darby*, Baron *Strange* of *Knocking* and *Mohan*, &c. a Dignity hereditary to him and his Heirs.

Good Orders
observed in
their Law.

The Inhabitants have a great happiness above those of *England*, in that they are freed from necessary and chargeable Suits, and heavy Fees of the *Lawyers*; for here no *Judge* or *Clerks* take any thing for drawing up Orders, or making up Processes, all Controversies being ended by the *Deemsters* without Writings, or matter of Charge; and for the deciding the same they have their several Courts, kept at certain times of the year for the Inhabitants of such a *Shending* or division of the *Isle*, where they have particular Officers, which do observe good Rules and Orders.

The People do here observe two very good Customs; the one, in not permitting the Poor to get their living by Begging; and the other, that when the Women go abroad, they begirt themselves with their *Winding-sheet*, to put them in mind of their Mortality.

This *Isle* is severed into two parts, *viz.* South and North, whereof the Inhabitants of the one have affinity with the *Scots*, and the other with the *Irish*. And in these parts are numbred 17 *Parishes*, and many *Villages*; is defended by two *Castles*, and for intercourse of Traffick hath five *Market-Towns*. Its chief places are,

Its chief
places.
Douglas.

Douglas, the best Peopled Town, and of the greatest resort by reason of its commodious Haven, unto which the *French* and others come to Traffick with them for their Commodities, as aforesaid; and for the security of the Harbour here is a *Block-house*.

Ruffin.

Ruffin, or *Castle-Town*, where (within a small *Isle*) *Pope Gregory* the Fourteenth instituted an *Episcopal See*: It is fortified with a strong *Castle*, but of no great importance, as to the security of the place, by reason of its distance from the rocky and shallow Harbour.

Laxi-Town.
Ramsby.

Laxi-Town, seated on a Bay so called.

Ramsby, situate on the Sea, where it hath a Haven, which for defence hath some Guns mounted thereon.

Peel.

Peel, or *Peel-Castle*, seated in *St. Patricks-Isle*, a place of great strength towards the Sea, and defended by a *Castle*, being a *Market-Town*; as are the former. Amongst its other places are these following; *Balacuri*, honoured with the Palace of the Bishop, *Kirk-Andrew*, *Kirk-Patriark*, *Kirk-Balalough*, *Kirk-Mighill*, *Kirk-Lennon*, *Kirk-Brodon*, *Kirk-Santon*, and *Kirk-Christ*.

The Isle of
Jersey de-
scribed.

JERSEY, seated near the Coast of *Normandy* in *France*, and opposite to *Hantsire* in *England*, of which it is a part; it is a place of good strength, as well by Nature as Art, as being fenced about with Shelves and Rocks, and defended by several *Castles*. It is an *Isle* of a fertile Soil; and the more by reason of their rich manuring it, bearing good crops of Corn, and other Grain, and breeding store of Cattle; especially good Flocks of Sheep, whose Wool is fine, of which they make *Jersey-Stockings* in great plenty. It is ill clothed with Wood; instead of which they use for Fuel a kind of Sea-weed, which they call *Vraic*, which plentifully groweth on the Rocks, and in the craggy Islands; and this being dried, they burn, and with the Ashes they manure the Land: Nor are they permitted to gather it, but in the Spring and Summer-season, and then upon certain days, according to the appointment of the Magistrates.

Its extent.

This *Isle* containeth in length, from *Mount-Orguil-Castle* in the East to *Sent-won-pool* in the West, about 10 miles; and in breadth, from *Dubon-point* in the South to *Plymouth-Bay* in the North, about 6; and in circumference about 38 miles.

It is

It is blest with a sweet, temperate, and wholesome Air, not being subject to any disease, except Agues in September. It is well watered with fresh Streams, and hath great plenty of Fruit; and the Inhabitants, who are much of the nature of the *French*, in their Language, Manners, &c. live very happily, enjoy the fruits of their labour, addicting themselves to Fishing, but principally to the Manufacture of Stockings, which finds good vent in *England*, and elsewhere.

Its Air and
temperature.

The Government of this *Isle* is as followeth; *viz.* a *Governour* or *Captain* is sent over by the King of *England*, who appointed Sub-Officers, as a *Bailiff*, who together with twelve *Jurates*, or sworn *Affrants*, which are elected out of the 12 *Parishes*, by the choice of the Inhabitants, sit and administer Justice in *Civil Causes*; but in *Criminal matters*, he sitteth with seven of them; and in *Causes* of *Conscience*, which are to be decided by reason and equity, with only three.

Government.

This *Isle* is every where furnished with commodious Creeks and Havens, and is garnished with twelve *Parishes*, besides several *Villages*. Its chief places are,

Its chief
places.

St. Hillares, so called from *St. Hillary* Bishop of *Poitiers*, who was hither banished, and here interr'd: a Town seated on the Sea-shoar, nigh unto which is a small *Isle* so called, which is fortified with a Garrison; and this Town is the principal in the *Isle* for its Market, Commerce, plenty of Inhabitants, and for being the place where the Courts of Judicature are kept.

St. Hillares.

St. Albans, seated not far from the Sea, where it hath a Haven; as also a small *Isle* so called.

St. Albans.

St. Clement, seated on an Arm of the Sea; not far from which is the *Castle* of *Mount-Orguil*, seated on a steep Rock on the Eastern-shoar; nigh unto which is a place called the *Rock*, and another called *St. Katharines-point*: also these Towns, *Trinity*, *St. Johns*, *St. Lawrence*, *St. Brelade*, *St. Peters*, *St. Owen*, *St. Maries*, and *Greve de Leke*; not far from which on the North-shoar, is seated the strong *Castle* of *Groness*.

St. Clements.
Mount-Orguil.

GARNSET, seated about 15 miles North-west from *Jersey*, and on the same Coast; an *Isle* not so large, nor altogether so fertile as *Jersey*, by reason the Inhabitants do not addict themselves so much to cultivating and manuring it, as they do to Traffick, for which this is more eminent; yet doth it in a liberal manner answer the Husbandmans labour, bringing forth good increase, and breeding good store of Cattle. This *Isle* is seated very high, having many steep Rocks, amongst which is found a hard and sharp Stone called *Emerill*, which is used by *Lapidaries*, for the cleansing, cutting, and burnishing their precious Stones; as also by *Glassiers*, for the cutting their Glass. And for many reasons this *Isle* may be preferred before *Jersey*, as for its greater strength, more commodious Havens, which are better resorted unto by Merchants, and for that it suffereth neither Toad, Snake, Adder, or any other venomous Creature to live, which the other doth.

The Government of this *Isle*, as also the People, as to their Language, Customs, &c. are much the same as in *Jersey*.

Its Govern-
ment.

In this *Isle* are numbred ten *Parish Churches*, besides *Villages*; the chief amongst which are,

Chief places.

St. Peters, a Town not very large, but well inhabited and replenished with Merchants. It is a place of good strength; for the entry of the Haven, which is Rocky, is fortified on both sides with *Castles*, as also by *Block-houses*, of which that on the right hand called *Cornet*, is seated on a high Rock, which at every High-water is encompassed with the Sea; and here resideth the *Governour*, as also (for the generality) the *Souldiers*, which are kept for the security of the *Isle*; and is well provided with all sorts of Ammunition for War, if occasion should so happen. Its other places are, *Tortuville*, *St. Saviours*, *St. Andrews*, *Trinity*, *St. Martins*, *St. Maries*, *St. Sampsons*, and *St. Michaels*. On the West part of the *Isle*, near the Sea, is a Lake of about a mile and an half in compass, which is well replenished with Fish, especially *Carp*s.

St. Peters.

Other places.

This

Serk-Isle.
Jethew-Isle.

Isle of Wight.

Portland-Isle.

Londay-Isle.

Chalvey and
Dinnoy-Isles.
Isles of Shippy
and Thanet.

This Island, as also that of *Jersey*, with several other small ones on the Coast of *Normandy* and *Britain*, are under the Diocess of *Winchester*; amongst which Isles are those of *Serke*, encompassed with steep Rocks. And *Jethew*, which serveth as a Park for the Governour of *Garnsey*, to feed Cattle, to keep *Deer*, *Coneys*, and *Pheasants*, and was formerly a solitary place of *Regular Canons*, and after for the *Franciscan Friars*.

ISLE of *WIGHT*, opposite to *Hants*, of which it is a part, already treated of in the description of the said County.

PORTLAND, a small Isle, adjoining to the County of *Dorset*, of which it is also a part, and already there treated of.

And besides these Isles, there are divers others which may not so properly be ranged under these four heads aforesaid; and such are those of

Londay, seated over against *Devonshire*, about two miles in length, and as much in breadth, very fertile and strong, whose chief place beareth the same name. Also *Chalvey* and *Dennoy*, all in the *Severn* Sea.

Also the Isles of *SHEPPY* and *THANET*, in (and near) *Kent*, already taken notice of; and lastly those of *FARN*, *COCKET*, and *HOLT*.

ISLAND, on the Coast of *Northumberland*, likewise there treated of.

Thus having given a Description of *EUROPE*, we shall in the next place take a View of *ASIA*.

ASIA,

ASIA,
as it is divided into

Firm Land;
whereof the
principal
Parts are,

TURKEY in ASIA, which comprehendeth the parts and chief places of

GEORGIE; which comprehendeth the parts and chief places of

ARABIA; with its parts and chief places of

PERSIA; with its chief Provinces and places of

INDIA, as it is divided into the

CHINA; with its chief Provinces and Cities of

TARTARIA; with its five Parts, and chief places of

Isles of JAPON; as

PHILLIPPINE Isles; as

Isles of MOLUCCO'S; as

Isles of SONDE; as

Isles of LARRONS, or THEVES.

Isles of CEVLAN.

Isles of the MALDIVES.

In the LEVANT Sea; as

In the ARCHIPELAGO; as

In the Mediterranean Sea; as

In the Archipelago; as

Anatolia,	Smyrna,
	Ephesus,
	Lampiasco,
	Burg,
	Scutari,
	Tripoli,
	Aleppo,
	Tripoli,
	Damascus,
	Hay,
	Caracmit,
	Achanchive,
	Samofar,
	Erzerum,
	Car,
	Majarequin,
	Fazze,
	Savatopoli,
	Cori,
	Chipeche,
	Strabent,
	Derbent,
	Bufferet,
	Mosab,
	Anna,
	Medias,
	Macca,
	Aden,
	Tauris,
	Gilan,
	Gorgian,
	Choy,
	Hifalban,
	Carbin,
	Kayen,
	Soufter,
	Chiraf,
	Giroft,
	Zarandi,
	Attock,
	Cabul,
	Lahor,
	Delly,
	Agra,
	Banipore,
	Surat,
	Cambaya,
	Bengala,
	Goa,
	Gokonda,
	Bifnagar,
	Harlingue,
	Calicut,
	Pegu,
	Boldia,
	Bangkok,
	Malacca,
	Pulocaceln,
	Keccio,
	Pequin,
	Nanguin,
	Nantop,
	Quicheo,
	Canton,
	Chequian,
	Tartaria Deferta,
	Uzbek,
	Turcheftan,
	Cathay,
	True Tartaria,
	Niphon,
	Nicoo,
	Nimo,
	Lufon,
	Mindanao,
	Molucques,
	Celebes,
	Gilolo,
	Sumatra,
	Borneo,
	Aru,
	Bornco,
	Bantam,
	Jacatra,
	Deftre,
	Colombo,
	Tilla don Matia,
	Famagroufte,
	Rhodis,
	Scarpanto,
	Scio,
	Metelin,
	Samo,
	Nicaria,
	Lango,
	Stampalia,

E c

ASIA.

ASIA.



Asia the first
place of Mo-
narchies, of all
Religions, &c.

ASIA is one of the Tripartite division of our Continent; and if we consider the advantages which the Author of Nature hath given it, if the Actions which have passed in it both before and after the *Flood*; that the first Monarchies, and all Religions have here had their beginnings; that the chief Mysteries (both of the Old and New Law) have there been laid open; we may be induced to prefer it before all other parts, either of the one or other Continent.

And as of the two Continents ours is much the greater, the more noble, and most considerable; so is *Asia* among the three parts of our Continent, the Greatest, the most Oriental, the most Temperate, and the Richest.

Its length and
breadth.

Its Extent from West to East is from the 55th Meridian or degree of Longitude unto the 180, containing 125 degrees of Longitude, which are about 2500 of our common Leagues; and from South to North from the Equator to the 72 Parallel or degree of Latitude, which is 72 degrees of Latitude, and makes about 1800 of our Leagues. In this length and breadth we do not comprehend the Islands which belong to *Asia*, which are as great, as rich, and possibly as numerous, as all the rest of the Universe.

Its Situation.

Its Situation, for the most part, is between the Circular Tropick of Cancer, and the Circle of the Arctick Pole scarce extending it self beyond this, but surpassing the other in divers of its Isles, which it expands under the Equator: so that almost all *Asia* is situate in the Temperate Zone; what it hath under the Torrid, being either Peninsula's or Isles, which the Waters and Sea may easily refresh.

Asia the richest of all the four Parts.

ASIA being the greatest, the best, and most temperate part of our Continent, it must by consequence be the richest; which not only appears in the goodness and excellencies of its Grains, Vines, Fruits, Herbs, &c. but likewise in its great quantities of Gold, Silver, Precious Stones, Spices, Drugs, and other Commodities and Rarities, which it sends forth and communicates to other parts, and particularly to Europe.

Amongst the three divisions of our Continent, *Asia* is that which hath the fairest advantage for its greatness, and for its situation; being that Country which saw the Creation of the first Man, the making of the first Woman; which fed the first Patriarchs, gave a place to the Terrestrial Paradise; that which received the Ark of Noah after the Flood; which was the Portion of Sem, the eldest Son of Noah, which built the Tower of Babel, which furnished the rest of the World with Inhabitants; which established the Monarchies of the Assyrians, Medes, Babylonians, and Persians; which formed the

Arts

PART

SEPT

A Generall MAPP of

ASIA

Designed by MOUNSIEUR
SANSON Geographer to the
FRENCH KING & Rendred
into English, & Illustrated
by RIC: BLOME. By his
MAJ^{ty} Especial Command

LONDON

Printed for Ric: Blome

1682



PTENTRIONAL OCEAN



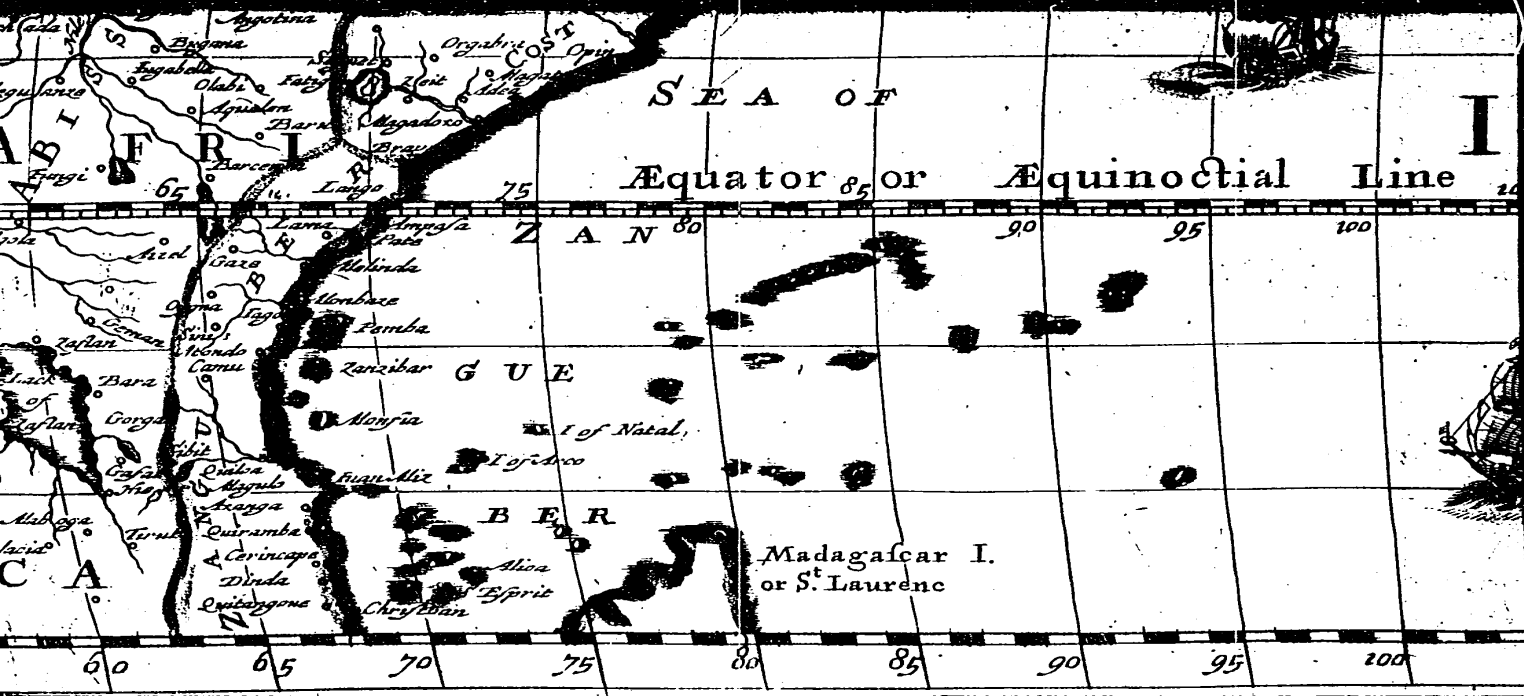
Then Noble Christopher Duke of Albemarle, Earle of
Torrington, Baron Mont of Euthertown, Beauchamp, and
Leys, K. of y. most noble order of y. Garter, Lord
Lieutenant of Devonshire & Essex, Captaine of
his Majesties Guardes of Horse, one of y. Gentlemen
of his Bed Chamber, & one of y. Lords of his most
Honorable Privy Councell &c.
This Map is most humbly
D.D.

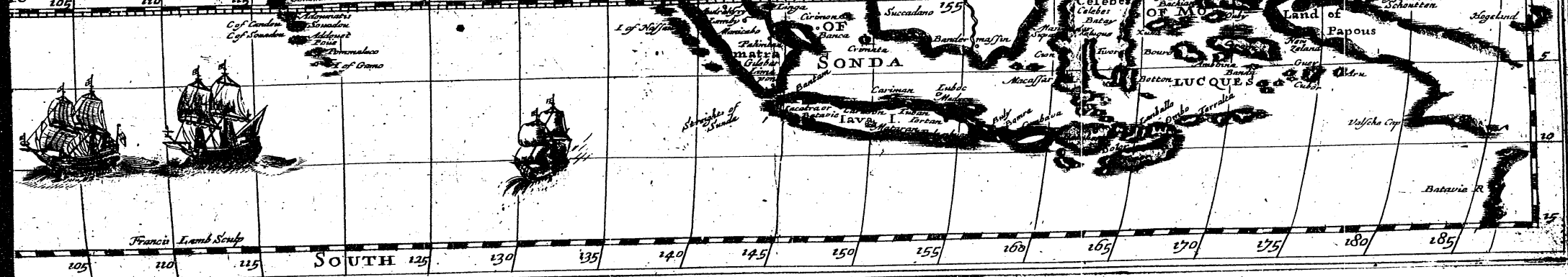
O R I
SEA of E N
ISLES of E N



CHINA
OCEAN







Arts and Sciences, Letters and Laws; which first and after the Law of Nature received *Paganism, Judaism, Christianity, and Mahometanism*; which saw the Birth, Life, Death, and Resurrection of the *Saviour of the World*: And therefore for all these Reasons we ought to esteem *Asia* much above either *Africa or Europe*. But let us proceed to its Name, Bounds, and Divisions.

The Name of *ASIA* is derived diversly by sundry Authors, but whether it took its name from a *Virgin-Woman*, or a *Philosopher*; whether from some *City*, *Country*, or *Marish*, or from whatever it were, most certain it is, that that Name was first known to the *Greeks*, on that Coast opposite to them towards the East: afterwards it was given to that Region which extends to the *Euphrates*, and which is called *Asia Minor*, and was communicated to all the most Oriental Regions of our Continent.

Its Bounds are towards the North, with the *Northern frozen*, or *Scythian Ocean*, to wit, that which washes *Tartary*; on the East and South with the *Oriental* or *Indian Ocean*, the Parts of which are the Seas of *China*, *India*, and *Arabia*. Towards the West, *Asia* is separated from *Africa* by the *Red-Sea*, from the Streight of *Babel-Mandel* unto the *Isthmus* of *Suez*; and from *Europe*, by the *Archipelago*, by the Sea of *Marmora*, and by the *Black-Sea*; drawing a Line cross all these Seas, and passing by the Streight of *Gallipoli*, or the *Dardanelles*; by the Streight of *Constantinople*, or Chanel of the *Black-Sea*, by the Streight of *Caffa*, or *Vospero*; the Line continuing by the Sea of *Zabaque*, and by the Rivers of *Don* or *Tana*, of *Volga* and of *Oby*, where they are joyned the nearest one to another.

Asia may be divided into firm Land, and Islands: the firm Land comprehends the Kingdoms of *Turkey in Asia, Arabia, Persia, India, China, and Tartary*: We will follow this order, and then end with the *Iles*.

E e 2

Turkey

TURKEY
in ASIA,
or that
which the
Grand Sig-
nior doth
possess in
whole, or in
part, in
ASIA;
wherein are
several Re-
gions,
Countries,
Isles, &c.
may be con-
sidered as
they lie

Westernly, and to-
wards EUROPE;
as,

ANATOLIA, or ASIA MINOR, wherein are comprised several Provinces; all which are at present by the Grand Signior included under four Beglerbeglies, that is, Lord Lieutenants; to wit, those of

Anatolia, particularly so called,

Caramania,

Tocat,

Aladuli,

Cyprus,

Rhodes,

Metelin, of old, Lesbos,

Samos,

Tenedos,

Scarpante,

Lero,

Negropont,

Goos,

Lero,

Pathmos,

Scio, or Chios,

Icaria, of old, Icarus,

Syria Propria,

Phoenicia,

Palestine, formerly Judea, Canaan, or the Holy Land,

Chaldea, or Babylonia, now Ycrack,

Mesopotamia, or the particular Diarbeck,

Assyria, now Arzerum,

Turoomans,

Curdes,

Georgiens,

Avogasia,

Mingrelle,

Gurgistan,

Quiria,

Southernly, and re-
garding Arabia and
the Mediterranean
Sea; as,

SOURIA, or SYRIA; with its parts of

Southernly, and to-
wards Arabia De-
serta; as,

ASSYRIA, now DIARBECK; with its parts of

Easternly, and re-
garding Persia; as,

TURCOMANIA; with its parts of

North-Easternly, and
towards the Caspi-
an Sea; as,

GEORGIA; with its parts of

Northernly, and to-
wards Moscow; as,

COMANIA,

Smyrna,
Ephesus,
Pergama,
Troya,
Burisa,
Comana,
Chalcedoine,
Scutari,
Sinopi,
Castele,
Angour,
Sardia,
Philadelphia,
Archalich,
Side,
Nigdia,
Tarsus,
Satalia,
Antiochia,
Anafie,
Tocat,
Trebisfonde,
Caifaria,
Carafar,
Maraf,
Arifangan,
Sukas,
Vardar,
Adana,
Maaraz,
Manbeg,
Nicosia,
Paphos,
Salamis,
Amathus,
Arfinoc,
Famagusta,
Rhodes,
Metelino,
Medina,
Samo,
Tenedos,
Scarpante,
Lero,
Colchis,
Coos,
Lero,
Pathmos,
Scio,
Nicaria,
Aleppo,
Aman,
Zeugma,
Antioch,
Samofar,
Hemz, or Emza,
Hierapolis,
Alexandrette,
Tripoli,
Sayd, or Sidon,
Tyre, or Sor,
Damasus,
Acre,
Jerusalem,
Samarie,
Naploufe,
Gaza,
Joppa, or Juffa,
Bagdad, or Babylon,
Balkera,
Coufa,
Orchoe,
Sipparam,
Orpha,
Carasemid,
Merdin,
Asanchif,
Carra,
Sumifcack,
Virta,
Mosul, of old, Ninive,
Schiarazur,
Erzerum,
Cars,
Schildir,
Bilis,
Derbent,
Tiflis,
St. Sophia,
Phazza,
Savatopoli,
Cori,
Basschiuch,
Zitrach,
Stranu,
Chipicha,
Afof,
Maurolaco,
Sereht.

Turkey



A MAP of THE ESTATES of the TURKISH EMPIRE in ASIA, and EUROPE
Designed by Mon^r Sanson Geographer to the French King

Turky in Asia.

UNDER the name of *TURKY* in *ASIA* we understand not all which the Great *Turk* possesses, but only certain Regions which he alone possesses, or if there be any Estates intermixed, they are inconsiderable. And in this *Turky* we shall find *Anatolia*, which the Ancients called *Asia Minor*; the greater *Souria*, which the Ancients called *Syria* the Great; *Turcomania*, by the Ancients called *Armenia* the Great; then *Diarbeck*, which answers to *Mesopotamia*, and to divers parts of *Assyria*; and the *Chaldea*, or *Babylonia* of the Ancients.

ANATOLIA is that great Peninsula, which is washed on the North by the *Black-Sea*, *Mare Major*, or *Euxine Sea*; and on the South by that part of the *Mediterranean* which we call the *Levant Sea*; which extends Westward to the *Archipelago* or *Ægean Sea*, and thence to the *Euphrates*, which bounds it on the East.

The Ancients divided this Great *Asia Minor* into many lesser Regions; of which the principal are, viz. *Pontus*, *Bithynia*, *Little Asia Minor*; into *Lycia*, *Galatia*, *Pamphilia*, *Cappadocia*, *Cilicia*, *Caria*, *Ionia*, *Æolia*, *Lydia*, *Phrygia* Major and Minor, *Paphlagonia*, *Lycaonia*, *Pysidia*, *Armenia Minor*, *Mysia*, the Isle of *Rhodes*, &c.

The Parts of
Asia Minor, or
Anatolia.

But at present the *Turks* do in general call this Great *Asia Minor*, *Anatolia*, which signifies *Orient*: That part of *Anatolia*, which is most exposed to the North, to wit, *Pontus*, *Bithynia*, *Galatia*, and *Cappadocia*, by the appellation of *Rumla*: The more Meridional parts they call *Costomandia*, which are *Lycia*, *Pamphilia*, and *Cilicia*: The *Little Asia Minor*, which is on the *Archipelago*, hath no other name than that of *Anatolia*.

But all these Names are little known amongst them, much less those which are attributed to the lesser parts of *Anatolia*. The *Turks* divide it into four *Beglerbeglies*, which are as our *Lord Lieutenancies*; under which are 33 or 34 *Sangiaccats*, which are as our particular Governments.

The *Turky* division of
Anatolia.

The *Beglerbeglies* are of *Anatolia*, of *Caramania*, of *Toccat*, and of *Aladuli*: The two first compose all the Western part of *Anatolia*; the two last all the Eastern part. The *Beglerby* of *Anatolia*, hath under him eleven or twelve *Sangiacks*. The *Beglerby* of *Caramania* hath only seven or eight; he of *Toccat* likewise seven or eight; and he of *Aladuli*, five or six.

The Cities where the *Beglerbies* keep their residence, are *Cuitage* or *Cutage*, formerly *Corycum*, for him of *Anatolia*; *Cogna*, once *Iconium*; others put *Cesaria*, once *Cesaria penes Anazarbum*, for him of *Caramania*; *Amasia*, which keeps its ancient name; and sometimes *Trebizonde*, formerly *Trapozus*, for him of *Toccat*; and *Maraz*, for him of *Aladuli*. But to proceed to the Provinces of *Anatolia*.

PONTUS is a Country of a large extent, and taketh up all the length of *Anatolia*, and was by the *Romans* anciently separated into four parts; viz. *Polemoniaccus*, *Pontus Galaticus*, *Pontus Cappadocius*, and *Metapontus*, or *Pontus* especially so called.

The Province of
Pontus described.

POLEMONIACUS hath for its chief places, *Nixaria*, formerly *Neo-Cesarea*, which is the Metropolis; *Zela*, enlarged by *Pompey*, and called *Metagalopolis*, *Barbanissa*, and lastly *Sebastia*, so called in honour of *Augustus*, whom

whom the *Greeks* called *Sebastos*; a place for strength very considerable, and contended against *Tamerlane*; which was no sooner taken by him, but (to avenge his Revenge) he caused most cruelly to be buried alive in great Pits about 12000 Men, Women, and Children. Night to this City is *Mount Stella*, where *Pompey* gave *Mithridates* his fatal overthrow. This *Mithridates* was a great and eminent King of *Pontus*, who for 40 years withstood the *Romans*; not more excellent in War, than in Learning and Memory, who spake 22 several Languages, who invented that Counter-poyson, from him named *Mithridate*; who at last, by the Rebellion of his Son, and the Valour of *L. Sulla*, *Lucullus* and *Pompey*, was vanquished; where *Pompey*, upon a small Island at the entrance of the *Euxine Sea*, erected a Pillar, which at this day bears his name, and is by the Inhabitants shewed to Strangers, as a memorial of his Victories in these parts.

In this part of *Pontus*, on the rise and fall of the River *Themodok*, and on the Banks thereof, the *Amazons*, a sort of Warlike Women were here said to reside, so called, either because they used to cut off their right Breasts, which otherwise would be an impediment to their shooting, or because they used to live together. They were at first *Scythians*, and accompanied their Husbands to these parts, about the time of the *Scythians* first coming into *Asia*; in the time of *Sesostris* King of *Egypt*. These People held a great hand over the *Themiscyria*, who inhabited this Region, and the Nations round about them, and at last by Treachery were murdered; but their Wives being grievously angry (as well through Grief and Fear, as Exile and Widow-hood) set upon the Conquerors, under the conduct of *Lampado* and *Marpesia*; who not only overthrew them, but also much added to the largeness of their Dominions, and for a considerable time continued in great reputation. The Names of the chiefest of the *Amazon Queens* were, *Lampado*, *Marpesia*, *Ortena*, *Antiope*, and *Penthesilea*, who with a Troop of gallant Virago's came to the Aid of *Priamus* King of *Troy*; who at last was slain by *Pyrhus*, Son to *Achilles*. These *Amazons*, in matters of Copulation, used to go to their neighbouring Men thrice in a year; and if it happened that they brought forth Males, they sent them to their Fathers; but if Females, then they kept them, and brought them up in the Discipline of War and Courage.

PONTUS GALATICUS is Eastward of *Pontus*; its chiefest Cities are, *viz.* 1. *Amasia*, remarkable for the Martyrdom of *St. Theodorus*, also being the Birth-place of *Sirabo* the famous Geographer; and in these latter times for being the residence of the eldest Sons of the *Grand Signior*, sent hither as soon as circumcised, who are not to return till the death of their Father. It is a great City; about 4 days Journey from the *Black-Sea*. 2. *Themiscyria*, now *Avagoria*, seated on a large Plain near the Sea. 3. *Diopolis*, remarkable for the great Overthrow *Lucullus* gave to *Mithridates*. 4. *Sinope*, of note for being the Birth and Sepulchre of *Mithridates*. 5. *Cashamona*, the chief City of the *Islandbars*, which for strength and situation, is by them preferred before *Sinope*.

PONTUS CAPADOCIUS hath for its chief places, *viz.* 1. *Cerasus*, from whence *Cberries* were first brought into *Italy* by *Lucullus*, after he had finished his War with *Mithridates*; 2. *Pharnacia*, built by *Pharnaces* a King of *Pontus*; 3. *Trebazon*, the Metropolis of the *Commeni*, famous for the Trade of Fish, caught by the People on the *Euxine* shoars, here salted, and then transported in great quantities to *Constantinople*, *Cassia*, and elsewhere. In this City did anciently reside the Deputies of the *Grecian Emperours*, for the security of the Out-parts against the Incurfions of the *Persians*; and now is the place of such Gallies, as by the *Grand Signior* are appointed for the scouring and securing their Trade on the Coasts of the *Euxine Sea*.

M. E. L. PONTUS, whose chief places were: 1. *Flaviopolis*, so called in honour to *Flavius Vespasianus*. 2. *Claudiopolis*, in honour to *Claudius*, Emperor of *Rome*. 3. *Jutropolis*, in honour of the *Julian* Family; all which are Mid-land Towns. 4. *Diospolis*, of great resort, on the *Euxine Sea*, so named from a Temple consecrated to *Jupiter*. 5. *Heraclia*, a Colony of the *Phocians*,

Here *Mithridates* had his overthrow.

A short account of the *Amazonian* Women, who here inhabited.

Chief places in *Pontus Galaticus*.

Chief places in *Pontus Capadocius*.

The chief places of *Mitropontus*.

Phocians, remarkable for being the Seat of a Branch of the Imperial Family of the *Commeni*. But above all is *Tocat*, a good fair City, built at the foot of a very high Mountain, spreading it self round about a great Rock that is in the midst of the Town, on the top of which is seated a Castle, with a good Garrison. It is well inhabited by *Armenians*, *Greeks*, *Jews*, and *Turks*, who have the command thereof; its Houses are well built, but its Streets are narrow, and amongst its *Mosques* there is one very stately. Here the *Christians* have 12 Churches, hath an *Archbishop*, under whom are 7 *Suffragans*. Here are two Monasteries for Men, and two for Women; the greatest part of the *Christians* are *Trademen*, and generally *Smiths*: this is the only place in all *Asia*, where plenty of *Saffron* groweth. This City is one of the most remarkable Thoroughfares in the East, where are continually lodged the Caravans from *Persia*, *Diarbeck*, *Constantinople*, *Smyrna*, *Synops*, and other places; and heretho Caravans turn off as they are variously bound. Adzed are excellent *Wines* and *Provisions* are had at easie rates.

BITHYNIA hath on the North the *Euxine Sea*; a place famous for the Victory of *Alexander* against the *Persians*; then for *Mount Stella*, where *Pompey* overthrew *Mithridates*; and *Tamerlane* with 800000 *Turks*; encountered *Bajazet* with 500000, where 20000 lost their lives, and *Bajazet* in the pride of his heart being taken, and penn'd up in an Iron Cage, beat out his own Brains against the Bars. Its chief places are, 1. *Nice*, where the first *General Council* was held by the appointment of *Constantine the Great*, for the expelling of the *Arian Heresie*. 2. *Chalcedon*, where the 4th *General Council* was, to repel the *Nestorian Heresie*. 3. *Scutari*, opposite to the Haven of *Constantinople*, in which place the *Persians* received their Tribute from the other Cities of these Parts; and lastly, 4. *Bursa*, once the Seat of the *Ottoman* Kings in *Asia*, till they gained *Adrianople* in *Europe*, by *Mahomet* the First; now inhabited by *Turks*, *Jews*, and *Greeks*; by foms accounted as fair, rich, and populous as *Constantinople*, and enjoys a great Trade. It is seated on the Foot of *Mount Olympus* for its defence, and is adorned with fair *Mosques*, and many Tombs of the *Ottoman* Princes.

LICIA hath for its Southern bounds the *Mediterranean Sea*, and is environed on 3 sides with the Mountain *Taurus*, which makes it very strong: It was formerly exceeding populous, containing about 60 Cities; the greatest part whereof remained in *St. Paul's* time, but now are reduced to ruins. The chiefest of which were, 1. *Mira*, the chief City of this Province; 2. *Baturna*, adorned with a fair Haven, and Temples; one of which was dedicated to *Apollon*, having therein an Oracle, and for Wealth and Credit suitable to that at *Delphos*. 3. *Telmessus*, whose Inhabitants are famous for interpreting of Dreams.

GALATIA is bounded on the East with *Cappadocia*. Towns of note, *viz.* 1. *Augoura*, seated on the River *Sungar*, 16 days Journey from *Constantinople*, famous for the Synod here held in the Primitive times; and is one of the greatest and richest places of this quarter, furnishing *Turky* with a great number of *Chamlets* and *Mo-hairs*. 2. *Tavium*, where there was a *Braken Statue* of *Jupiter*, in whose Temple there was a privileged Sanctuary. To this Province *St. Paul* did dedicate one of his Epistles.

PAMPHYLIA hath for its Southern bounds the *Mediterranean Sea*. The principal Cities are, 1. *Satalia*, (founded by *Ptolemy Philadelphus*, King of *Egypt*;) is the strongest, and best for Traffick of all its Coasts, communicating its name to the neighbouring Gulph, called *Golfo di Satalia*; and to the most Oriental part of the *Mediterranean Sea*; famous for the rich *Tapestries* that are here made. 2. *Side*, famous in the time of the *Gentiles* for a Temple of *Pallas*. 3. *Perge*, renowned in Old time for the Temple of *Diana*, and for the Annual Feasts there held in honour of her; and yet more famous for *St. Paul's* Preaching here. 4. *Aspendus*, and Inland Town, strongly situated, once the Metropolis of the Province, famous of old for its *Musicians*. These Provinces were converted to Christianity by the Apostles, *St. Paul* (who Journeyed through most Cities in these quarters,) *St. Peter*, and *St. John*, as doth appear

The Province of *Bithynia* bounded.

Chief places in *Bithynia*.

The Province of *Lycia* bounded, and its Cities described.

The Province of *Galatia* bounded, and its chief places treated of.

The Province of *Pamphylia*, and its chief places.

appear by Holy Scripture. The Country for the most part is very Mountainous, which proceed from Mount *Taurus*, as branches thereof: Here are abundance of *Goats*, of whose Hair are made great quantities of *Grograins* and *Chamlits*, which for fineness are not inferior to *Silk*, with which it serves other Countries, being its chief Commodity; but nearer the Sea it is more fruitful, being well watered and planted, more populous and pleasant.

The Province of Cappadocia bounded.

CAPPADOCIA hath for its chief places, 1. *Mazaca*, enlarged and beautified by *Tiberius* the Emperour; and in honour to *Augustus Caesar*, by him called *Cesarea*, being the Metropolitan City of *Cappadocia*; as also the Episcopal See of *St. Basil*. 2. *Nyssa*, the See of *Gregory*, Surnamed *Nysenus*, and Brother to *Basil*. 3. *Nazianzum*, also the Episcopal See of another *Gregory*, Surnamed *Nazianzeus*, which 3 for their admirable abilities in all kind of Learning, and for their Piety, are not to be paralleld. 4. *Comana*, remarkable of old for its Temple consecrated to *Belloni*, whose Priests, and other inferior Officers of both Sexes, in the time of *Strabo* amounted to about 6000. 5. *Erzirum*, situate in the Confines of *Armenia Major*, which is the Rendezvous for the *Turkish* Army, when they have any design against *Persia*; at which place they are likewise disbanded and sent home, being a Frontier Town. It is seated at the end of a large Plain, circled with Mountains; its Houses are not very well built, but hath several great Inns for entertainment of Passengers, as at *Tocat*; and it is observable, that *Barly* after 40 days, and *Wheat* after 60, is fit to cut: And, 6. *Pterium*, memorable for the great Battel fought between *Cræsus* King of *Lydia*, and *Cyrus* of *Persia*; in which *Cræsus* lost not only the Field, but also his Kingdom. The Country is very rich in Mines of *Silver*, *Iron*, *Brass*, and *Alum*; hath great plenty of *Wine*, and several sorts of Fruits; also *Crystal*, *Jasper*, and the *Onyx-stone*: But the greatest Wealth which they have is their Horses. The People of this Country were anciently very Vicious, and prone to all kinds of Wickedness; but since Christianity was received amongst them, their former Vices are now changed to Virtues.

The Province of Cilicia, and its chief places.

CILICIA hath on the South the *Mediterranean Sea*. Places of note here found are, viz. 1. *Tarsis*, pleasantly seated, famous for the Birth-place of *St. Paul*; 2. *Anchiala*, on the Sea-side; both which, with some others, were built in one day by *Sardanapalus* King of *Assyria*. 3. *Epiphania*, the Birth-place of *George* the *Arian*, Bishop of *Alexandria*. 4. *Adena*, seated in a fruitful Soil, abounding in *Corn* and *Wine*, defended by a strong Castle. 5. *Alexandria*, built by *Alexander* the Great; and to distinguish it from *Alexandria* in *Egypt*, was named *Alexandretta*, but now *Scanderone*; a famous Haven-Town, serving for the Scale to *Aleppo*, which is distant from it about 100 *English* miles, to which all Shipping, either out of the *Ocean* or *Mediterranean*, come to lade and unlade their Goods, which are hence transported by *Camels* to *Aleppo*; and here the *English*, *French*, and *Venetians*, have their *Vice-Consuls* to protect their Goods and Ships. 6. *Amavarsa*, a City in the time of *Strabo*, of great antiquity. 7. *Nicopolis*, founded by *Alexander* in memory of his great Victory: And 8. *Iffus*, seated on a large Bay, famous for the Battel here fought between *Alexander* (with an inconsiderable Army of *Macedonians*) and *Darius*, and his vast Army, which consisted of about 600000 *Assyrians*; whereof about 160000 of the *Persians* were slain, and about 40000 taken Prisoners; in which Battel, the Wives and Daughters of *Darius* were taken, *Alexander* not losing above 200 of his Men.

On the Right-hand of *Cilicia* is *Isauria*, which may bear the name of a Province: It is fruitful in *Vines*, and several sorts of Fruits, having a rich Soil. The chief Cities are, 1. *Claudiopolis*, into which *Claudius* the Emperour brought a *Roman* Colony: And, 2. *Seleucia*, founded by *Seleucus*.

The Province of Caria bounded, and its chief places described.

CARIA hath for its Southern bounds the *Carpathian Sea*. Its chief places are, 1. *Miletus*, not far from the Hill *Latmus*, the Birth-place of *Thales*, one of the 7 Wise-men of *Greece*; to this place *St. Paul* called together the Bishops of *Ephesus* and other of the adjoining Cities. 2. *Mindus*, which being but a small City, and its Gates so big, made *Diogenes* the *Cynick* to cry out, to have

have them shut their Gates; lest the City should run out at them. 3. *Milasa*, famous in old time for two Temples dedicated to *Jupiter*: And 4. *Borgylia*, where *Diana* also had a Temple.

In this Country is the Hill *Latmus*, which was the retiring place of *Endymion*, who by the study of *Astronomy* did there find out the Changes and Courses of the *Moon*, by the *Poets* feigned to be her Favourite; others there be who would have it, that in a Cave under this Hill *Jupiter* hid him, and casting him in a deep sleep, descended sometimes to kiss him.

IONIA, bounded on the West with the *Aegean Sea*. Places of note in this Country are, 1. *Ephesus*, famous for many things; as, *First*, for being the Burial-place of *St. John the Evangelist*, who (as some say) went here alive into the Grave. *Secondly*, for the Temple of *Diana*, which, for its Greatness, Furniture, and stately Workmanship, was accounted one of the Wonders of the World. *Thirdly*, for *St. Pauls* directing an *Epistle* to the Inhabitants thereof. *Fourthly*, for being the Episcopal See of *Timothy the Evangelist*, first Bishop hereof: And, *Fifthly*, for its Ecclesiastical Council here; but now much ruined from its ancient beauty, it being now reduced to a small Village. 2. *Smyna*, which is now the only City of Trade in these parts; famous for being one of the 7 Churches of *Asia*, to which *St. John* dedicated his *Revelation*, being one of those 7 Cities that strove for the Birth of *Homer*, where (in a Cave hard by) he is said to have writ his *Poems*: But now violated by the *Mahometans*, her Beauty is turned into Deformity, her Religion into Impiety, and her knowledge into Barbarism. This City is seated on the bottom of a Bay or Gulph, called the Gulph of *Smyna*, where the *English*, *French*, and *Venetians* keep *Consuls* to protect their Merchants, and keep up their Trade, it being under the Jurisdiction of the *Grand Signior*. 3. *Colophon*, another of those Cities which strove for the Birth of *Homer*: Here the People are so well skill'd in Horsemanship, that whose side soever they took in War, were sure to gain the Victory. 4. *Erythra*, the habitation of one of the *Sibyls*, from whence called *Sibylla Erythraea*. 5. *Ipsus*, remarkable for the great Battel betwixt *Antigonos* and *Seleucus*, two of *Alexanders* chief Commanders, wherein *Antigonos* lost both the day, and his life. 6. *Lebedus*, of note in ancient times for those Plays here yearly held in honour to *Bacchus*. 7. *Prisene*, the Birth-place of *Bias*, one of the 7 Wise-men of *Greece*: And, 8. *Clazomene*, seated on a small *Isle* near the shoar, beautified with a Temple dedicated to *Apollo*.

The Province of Ionia bounded, with its chief places.

ÆOLIS, North of *Ionis*, hath for its chief places, 1. *Cuma*, the habitation of *Sibylla*, Surnamed *Cumana*. 2. *Elea*, on the Mouth of *Caicus*, being the Port-Town to *Pergamus*. 3. *Myrina*, which in honour to *Augustus* is called *Sebastopolis*. 4. *Pitane*, not far from the *Aegean Sea*; and here they had an art in making *Bricks* that would swim above water.

The Province of Æolis, and its chief places.

LYDIA: Its chief Cities are, 1. *Sardis*, in which was one of the 7 Churches in *Asia*, being the Royal Seat of *Cræsus*, and the Kings of *Lydia*, until it was subdued by the *Persians*; and, 2. *Philadelphia*, on the Banks of the River *Gastryus*. Its People are said to be the first Inventors of *Dice*, *Chess*, and other such Games; as also the first *Hucksters*, *Pedlers*, and the first *Coiners* of *Money*. The Country by reason of the great plenty of gallant Rivers renders it very fruitful and pleasant, being enriched with Mines of *Gold* and *Silver*, as also precious Stones.

The Province of Lydia, and its chief places.

PHRYGIA MAJOR, bounded on the East with *Galatia*. The chief places are, 1. *Gordion*, the Seat of *Gordius*, which from the Plough-tail was taken and chosen King of this Kingdom, who tied such a Knot, (called the *Gordian-knot*) which *Alexander* the Great cut in pieces, when he could not untie it. 2. *Midium*, the Seat of *Midas*, Son to this *Gordius*; who covetously petitioned *Bacchus*, that whatsoever he touched should be turned into *Gold*; which was granted, but soon was forced to lose the benefit of it, else he would have been starved, his *Vittuals* turning into *Gold*: and falling into a second oversight in Judgment, in preferring *Pan's Pipe* before *Apollo's Harp*, he for his small Judgment in Musick, was rewarded with a comely pair of *Asses-ears*. 3. *Colossi*,

The Province of Phrygia Major bounded, and its chief places.

3. *Colossi*, to whom *St. Paul* writ one of his Epistles. 4. *Pessinus*, where the goddess *Cybele* was worshipped, being called *Dea Pessinuntia*. This City is placed in the Borders of *Galatia*. The Country is very rich, pleasant, and well watered with *Rivers*, the People being anciently more Superstitious than in any other place of *Asia*, as is manifest by the Rites used in their Sacrifices of *Cybele*, and other of their goddesses, being accounted such as use Divination. They are a People which much delight in Effeminacy. Here Reigned *Tantalus*, who wanting wisdom to make use of his great Riches, is by the *Poets* feigned to stand in *Hell* up to the chin in water, under a Tree whose Fruit doth touch his Lips, but yet cannot reach them.

PHRYGIA MINOR, bounded on the South with the *Aegean Sea*. Places of most note, viz. 1. *Dardanium*, or *Dardania*, being the Town and Patrimony of *Aeneas*. 2. *Troy*, seated on the Banks of the River *Scamander*, famous for having sustained a Ten years Siege against the *Greeks*; in which time the *Trojans* lost 860000 Men, and the *Grecians* 666000 Men, being then so famous a City, that it might be counted the glory of the East, from whence all Nations desire to derive their beginning; but now remaining nothing but Ruins. Four miles from which there was another City, built by *Lysimachus*, one of *Alexanders* Captains, which from other Cities there adjoining was peopled; by him called *Alexandria*, or *Troas Alexandria*, or *New Troy*, in honour of *Alexander* the Great, who begun the Work, which though not so great, rich, and famous as the first, yet was the Metropolis of the Province; but now by the *Turks* quite ruined, by their carrying the Stones and Pillars to *Constantinople*, for the beautifying of their *Basbahs* Houses. 3. *Sigeum*, the Port-Town to *Troy*. 4. *Assus*, called by *Pliny*, *Apollonia*, in which place the Earth will consume the Bodies of the Dead in 40 days. 5. *Lyrnessus*, opposite to the Isle of *Lesbos*, destroyed by *Achilles* and the *Greeks* in the beginning of the *Trojan War*.

PAPHLAGONIA hath for its chief Cities, 1. *Gangra*, remarkable for a Council there held in the Primitive times, called *Synodus Gangrensis*. 2. *Pompeopolis*, so called by *Pompey* the Great: And, 3. *Comata*, or *Conica*, fortified by *Mithridates*, when he was Master of this Country.

LYCAONIA, bounded on the East with *Armenia Minor*. The most eminent places in this Country are, 1. *Iconium* (now *Cogni*) the Regal Seat of the *Aladine Kings*; a place of great strength, whose situation is in the Mountains, advantageous for defence and safety. 2. *Lystra*, famous for the Birth-place of *Timothy*, and where *Paul* and *Barnabas* having healed a Cripple, were adored for *Mercury* and *Jupiter*: And, 3. *Derbe*, where the said *Apostle* preached.

LYSIDIA hath for its chief places, 1. *Seleucia*, built by *Seleucus*. 2. *Sagalassa*, situate in the most fruitful part of this Country. 3. *Selge*, a Colony of the *Lacedemonians*: And, 4. *Termessus*, strongly seated. This Country was famous for the Battel fought betwixt *Cyrus* and *Artaxerxes*; where *Cyrus* lost his life, and the Victory; out of which *Xenophon* made that notable Retreat with his *Grecians*, in the despite of 20000 Men, which pursued him.

ARMENIA MINOR is bounded on the East with the *Euphrates*; which separates it from *Armenia Major*. Cities of note, viz. 1. *Metelint*, the Metropolitane City, now called *Suur*, abounding in great quantities of *Wine* and *Oil*. 2. *Nicopolis*, built by *Pompey* in remembrance of a Victory he there obtained against the Forces of *Tygranes*, King of *Syria*. 3. *Garnasa*, a strong Town. 4. *Oromandus*; and, 5. *Arabyssus*, remarkable for the exile of *St. Chrysostom*, Patriarch of *Constantinople*, confined here by the malice of the Emperors *Eudoxia*. This Country, as to its fertility, pleasantness, &c. is the same as *Cappadocia* afore-mentioned.

MITSLIA hath for its chief places, 1. *Cyzicus*, seated in the *Propontis*, in an Island of the same name, but so near the Continent, that it is joyned to it by two Bridges. The Metropolis of the *Consular Hellespont*, a place of great strength and beauty, whose Walls, Bulwarks, Towers, and Haven, were made of Marble. 3. *Adramyttium* where *Paul* took Shipping to go to *Rome*: And,

And, 4. *Pergamus*, seated in a goodly Plain, on the Banks of the River *Caicus*; a place of great strength, beautified with a Library of about 200000 Volumes or Manuscripts, all writ in *Parchment*; famous also for those costly Hangings known to us by *Tapestry*. Here was one of the 7 Churches of *Asia*, to which *St. John* writ his *Revelation*; and lastly, famous for the Birth-place of *Galen*, the eminent Physician, who lived to the Age of 140 years in good health.

The Mountains and Rivers in *Anatolia* may have somewhat in particular observed of them. Mount *Taurus* begins between *Lysia* and *Caria*, and extends it self all the length of *Asia*, being a continual Ridge of Hills, running through *Asia* from West to East; which for its length, height, and the branches it casts forth on one side and the other, the greatest and most famous Mountain in the World. On Mount *Ida*, the *Trojan Paris* judged of the Beauty of *Juno*, *Pallas*, and *Venus*, and giving the Golden Apple to the last, drew on himself and his Friends the enmity of the other two. On the Mountain *Tmolus* in *Lydia*, *Midas*, having esteemed *Pan's* Pipe to be more pleasant than the Harp of *Apollo*, was by him pulled by the Ears, not to make them greater, but so hard as gave occasion to the *Poets* to jeer him, and say, that he had *Asses* Ears. This Mountain is very fruitful, especially in *Vines* and *Saffron*. On *Crags* was feigned to be the Monster *Chimera*, which *Bellerophon* made tractable. On *Latmus* in *Caria* passed the Loves of the *Moon*, and *Endymion*, &c.

Amongst the Rivers, *Pactolus* hath rouled down so much Gold in its Streams, since *Midas* washed there, that the Riches of *Cræsus*, and others, are come from thence. The *Granick* was witness of the Victory of *Alexander* the Great, against the *Satrapes* of *Darius*; but *Alexander* washing himself in the cold waters of *Cidnus*, had near lost his life. The River *Acheron*, and the Lake *Acherusia*, near *Heracleia* in *Bithynia*, are esteemed to reach to *Hell*; and that this way *Hercules* brought up the Villain *Cerberus*. *Halys* (at present *Lali*) served for the bounds and limits between the Kingdom of *Cræsus* and the Empire of the *Persians*; but it proved fatal to *Cræsus*, &c.

There are many other things observable about, and within the lesser *Asia*. The *Bosphorus* of *Thrace*, or Channel of the *Black-Sea*, or Strait of *Constantinople*, is so narrow, that *Darius Hystaspes* built a Bridge over it, and passed with his Troops over it from *Asia* into *Europe*, to make War against the *Scythians*. *Xerxes*, the Son of *Darius*, did as much over the *Hellespont* or Strait of *Gallipoli*, or the *Dardanelles*, which we call the *Castles of Sestos* and *Abydos*, which are seated three Leagues above the entrance, and at the narrowest place of the *Hellespont*, opposite each to other: Formerly famous for the unfortunate Loves of *Hero* and *Leander*, drowned in the merciless Surges. Here also *Xerxes*, whose populous Army drank Rivers dry, and made Mountains circumnavigable, is said to have passed over into *Greece* on a Bridge of Boats. *Sestos* is strongly seated on the side of a Mountain, descending to the Sea on the *European* shoar; *Abydos*, on a low Level on the *Asian* shoar. The *Amaniden* Streights, or Passes of Mount *Aman*, between *Cilicia* and *Syria*, are easie to keep; the Way for about 2500 Paces, being between Rocks and Crags; the Feet of which are washed with many streams which fall off from the Mountains. Here it was that *Alexander* the Great vanquished *Darius*.

The ISLANDS about ASIA MINOR.

THE ISLANDS about *ASIA MINOR* have been very remarkable to Antiquity, though not so at present: They are almost in the *Archipelago*; some in the *Mediterranean Sea*, almost none in the *Black Sea*; yet at the entrance into that Sea, and near the *Bosphorus* of *Thrace*, are 1. The two Islands called *CTANEE S*, so near the one to the other, that the Ancients would make us believe they joyned. 2. *METELEN*, of old *LESBO S*, famous for the City *Metelint*, which for its greatness and excellency of its *Wines*, gives name to the Island. In this place was born *Sappho*, the

Mountains in
Anatolia, worthy of note.

Rivers.

Things worthy of note in
Asia Minor.

Islands.

1. Cyanees.
2. Lesbos.

the Inventress of the *Sapphick Verse*: *Pittacus* one of the Sages of *Greece*; and *Axion*, the *Dolphin Harper*. 3. *SCIO*, or *CHIOS*, distant from the *Jousan* shoar four Leagues, being in compass about 126 miles; remarkable for the Church of its Convent of *Niomena*, one of the fairest in the World. It affordeth excellent Fruits in great plenty, but of most note for its *Mastick*, not found elsewhere; it is now under the power of the *Grand Signior*. 4. *ICARIA*, now called *Niceria*, in compass 12 Leagues; here *Icarus* suffered Shipwreck; abounding in *Corn* and *Pasturage*. 5. *PATHMOS*, in compass about ten Leagues; Mountainous, but reasonably fruitful, especially in Grain. Here it was that *St. John* being banished by *Domitian*, writ his *Revelation* to the Churches of *Asia*. 6. *PARMACUSA*, near *Miletum*, where *Cesar* was taken by them. 7. *CLAROS* or *CASAMO*, about 13 Leagues in compass, very Mountainous, but hath good Harbours; in former times sacred to *Apollo*; abounding in great plenty of *Aloes*, where they are gathered and transported to other Countries. 8. *LERO*, noted also for *Aloes*. 9. *COOS*, seated in the bottom of the *Aegean Sea*, furnished with sweet and pleasant Streams, which refresh this Island, and makes it very fruitful; it is in compass 23 Leagues, having its chief place so called, fortified with a strong Tower, now a Garrison of the *Turks*. This Island is remarkable for being the Birth-place of so many famous men, especially *Hippocrates*, the Reviver of *Physick*, when almost decayed, unto the ancient practice of *Aesculapius*, unto whom this Island was consecrated, having therein a Temple, made rich with the Offerings of those that had been sick, whose Cures were there Registered; and *Apelles* the famous Painter. 10. *Scarpante*, stored with the best *Coral* in the World. 11. *NICOSIA*, which was the Seat of the Kings of the Family of *Lusignea*, and the See of an *Archbishop*, and Peopled with 40000 Families. 12. *PARMACUSA*, situate on the Sea, much stronger than *Nicosia*. 13. *RAPHUS*, of old *Raphus*, famous for its Temple, dedicated to *Venus*. Mount *Olympus*, now *St. Michaels Mount*, stands in the middle of this Island. 14. *NEGROPONTE*, where the Sea ebbs and flows seven times a day; which because *Aristotle* could not unriddle, he here drowned himself; the chief City is *Colchis*. 15. *SAMOS*, about 30 Leagues in compass, strongly seated almost on all sides with Rocks, having a fair Haven, fertil in Fruits, especially in *Oil* and *Olives*; the Island much infested with *Pirates*. This is the only place in the World for *Sponges*, under whose Rocks they grow in the Sea; for the getting of which they have People which from their Infancy are bred up with *dry Bisket*, and other extenuating diet, to make them lean; then taking a *Sponge* wet in *Oil*; they hold it part in their Mouths and part without, and so they dive down into the Sea to get it; those that have been used to this trade, can abide under water almost an hour together. 16. *TENEDOS*, situate at the Mouth of the *Hellepont*, opposite to *Troy*, remarkable for the concealing the *Grecian Navy*, which proved the final destruction of *Troy*. 17. *RHODES*, situate in the *Carpathian* or *Rhodian Sea*, being in compass 46 Leagues; a place of great strength, its Soil fertil, its Air temperate, plentiful in all things, as well for delight as profit, full of excellent Pastures, adorned with pleasant Trees, whose Leaves are all the year long in their verdure. In this Island the *Sun* is so powerful and constant, as it was anciently dedicated to *Phaebus*. This Island, as *Sandys* in his Book of Travels noteth, was held Sacred to the *Sun*, to whom they erected that vast *Colossus* of Brass, which may well be accounted one of the Seven Wonders of the World: He faith, this *Colossus* was in height 70 Cubits; every Finger as big as an ordinary Statue, and the Thumb too great to be fathomed. It was 12 years a making; the bigness was such, that being erected at the entrance of the Port, Ships past between its Legs; but in 66 years, by an Earthquake it was thrown down and broken in pieces. And besides the Mass of Stones contained therein, 900 *Camels* were laden with the Brass, which was used about it. This City bearing the name of the Island, is seated 4 miles from the ancient City, famous of old for their Government, their expert Navigations, and since for the abode of the Knights of *St. John of Jerusalem*, now in the hands of the *Turk*. This City and Island of

of *Rhodes*, as indeed *Tenedos*, *Samos*, and the rest of the Isles in this Sea, are of little or no Trade; yet they are found to produce several good Commodities: And, 18. *CTPRUS*, which amongst all is the greatest, being in circuit about 183 Leagues distant from the *Cilician* shoar, about 20 Leagues it stretcheth itself from East to West, in form of a *Fleece*, and thrusting forth a great many Promontories. This Island, during the Empire of the *Perians* and *Macedonians*, was accounted for Nine Kingdoms, most of them bearing the names of their principal Towns; but by *Protony* divided into these 4 Provinces, viz. 1. *Lapethia*, 2. *Paphia*, 3. *Salamine*, and 4. *Amathusia*. Places of most note are, 1. *Nicosia*, the Metropolis of the Island, being a walled City, in form round, five miles in compass, adorned with stately Buildings, resembling some Cities in *Florence*, as well for its beauty and pleasant situation, as for its plentifulness in People. 2. *Tremitas*, the Birth-place of *Spiridon*, a famous Bishop of the Primitive times. 3. *Paphos*, seated near the Sea, built by *Paphos*, Son of *Pygmalion*, King of *Phenicia* and *Cyprus*, where stands *Pygmalions Statue*; which (as the *Poets* feign) was by the power of *Venus* turned into a Woman; where she had her so much celebrated Temple, and where her Votaries of both Sexes in their natural nakedness, did perform her Sacrifices. 4. *Salamis*, once the Metropolis of the Island, but now turned to Ruins; in which there was a famous Temple consecrated unto *Jupiter*. 5. *Aphrodisium*, so named from *Venus*, where she had another Temple. 6. *Famagusta*, though but small, yet one of the chiefest in this Island, strongly seated. 7. *Arifnoe*, famous for the Groves of *Jupiter*. 8. *Amathus*, renowned for the Annual Sacrifices made unto *Adonis*, the darling of *Venus*, where she had another Temple. 9. *Episcopia*, where *Apollo* had both a Temple and a Grove. This Temple was held so Sacred, that those which touched it were thrown into the Sea.

This Island is seated under the Fourth Climate, which makes the longest day to be but 14 hours and a half. It is exceeding rich and fertil, abounding in *Corn*, *Wine*, *Oil*, *Silks*, *Cotton*, *Turpentine*, *Wool*, *Hony*, *Salt*, *Verdigreuce*, *Alum*, *Storax*, *Colloquintida*, *Laudanum*: All sorts of Metals, &c.

To this Isle, as to all other parts of *Turky*, no *English* are suffered to Trade, except those of the Company of *Levant* Merchants; where they have a Factory, and a Consul, who is generally elected by the said *Levant* Company, and established by the Ambassador. The People are very civil to Strangers, delighting in Hospitality, also addicting themselves to War, being strong and active; and the Women were in former times given to unchastity, by reason of their so great adoration of their goddess *Venus*, it being the custom of those Women to prostitute themselves on the Shoars to Passers by; where their Virgins would do the same. But upon their receiving of Christianity, by the Preachings of *St. Paul* and *Barnabas*, being the Birth-place of the latter, this (with other of their uncivil and barbarous Customs) were laid aside.

This *ANATOLIA*, or *ASIA MINOR*, which I have hitherto treated of, is seated (for the most part) all in a healthful and temperate Air, the Soil being generally fruitful, once very populous, and replenished with many fair and goodly Cities, now lamenting the loss of about 4000, some of which by *Earthquakes*, but most by the Wars the *Turks* brought against them. The Commodities or Merchandizes which it abounds with, and communicates to other Nations, are chiefly excellent *Wines*, *Goats-hair*, *Camels-hair*, *Grograin Tarn*, *Silk*, *Cotton Wool*, *Cotton Tarn*, Cloth of a coarse make, *Coral*, *Gauls*, though not so good as those of *Syria*, *Grograins*, *Chamlets*, *Mohairs*, *Turky-Carpets*, *Sponges*, *Turpentine* the best in the World; *Mastick*, with some other Commodities of less note which the *English*, *French*, *Venetians*, and *Dutch* fetch from hence; but chiefly from *Smyrna*, it being the chief Town of Trade, being a flourishing Factory, where those Nations (as hath been said before) keep their Consuls.

18. Cyprus.

Provinces in Cyprus.

The situation, fertility, and Commodities of Cyprus.

The People of Cyprus.

Commodities in Asia Minor.

SOURIA, or SYRIA.

Its Bounds.

SOURIA, formerly SYRIA the Great, and at present *Soristan* with the Eastern People, is near hand that which the Romans called their Diocesis of the East, as may seem by our now calling it the *Levant*. It extends from the *Mediterranean Sea*, which washes its Western Coast, to the *Euphrates*, which on the East divides it from *Diarbeck*; and from Mount *Aman*, or *Monte-Negro*, which bounds it on the North, and separates it from *Cilicia* unto *Arabia* and *Egypt*, which border on its Southern parts.

Its Parts, or Division by the Turks.

The Ancients have divided it into three principal Parts: the particular *Syria*, called *Syria Propria*, which (as the greatest and best) held the name of all *Phœnicia*, and *Judea* or *Palestine*: This last stretcheth more towards the South, *Syria* towards the North, and *Phœnicia* remaineth in the middle; and all are along the *Mediterranean Sea*, from *Anatolia* into *Egypt*; the particular *Syria* alone touches the *Euphrates*, the rest upon *Arabia*. At present the *Turks* divide all *Syria* into two *Beglerbeglies*, *Aleppo*, and *Damascus*; some make a third of *Tripoli* of *Syria*: and give to this last five *Sangiacats*, nine or ten to *Damascus*, and seven to *Aleppo*; which in all are 16 or 20 *Sangiacats*, whose Names and Situations are for the most part unknown; we will content our selves to speak something of the *Cities*, which have been, or which yet are, the principal of all these Quarters, beginning with those of *Syria*.

SYRIA PROPRIA.

Syria Propria, its bounds, fertility, and people.

Its chief places.

SYRIA PROPRIA is bounded on the East with the River *Euphrates*, and on the West with the *Mediterranean Sea*. It is very fertile, affording plenty of excellent *Fruits*, *Cotton-Wool*, *Sheep*, which have Tails that weigh about 30 pounds, with several other good Commodities. The People were formerly very industrious, but much addicted to Gluttony, as did appear by their often and great Feasting; they were subtle in their dealings, much given to Superstition, being worshippers, of the goddesses *Fortune*, and other of their *Syrian* goddesses, much addicted to Plays and Pastimes, and given to Scoffing and Laughter. The chief Places in this Country are, 1. *Antioch*, or *Antiochia*, once the Metropolis of *Syria*, once so fair, that it held the third or fourth degree amongst the best Cities of the *Roman* Empire. Its Walls are yet standing, and the most beautiful that Eye ever beheld; within it is nothing but Ruins. Its situation is on the River *Orontes*, so called; at present *Assi*, or *Hafer*, four Leagues from the *Mediterranean* shoar; a place of great strength, having for its Fortification an enclosure of two strong Walls, on which for their further defence, were erected about 460 Towers, together with a strong Castle. The City before its Ruins being adorned with stately *Palaces*, *Temples*, &c. fit for so great a City, being formerly the Seat of some of the *Roman* Emperours, and of the chief Officers of their Empire in the *Orient*. It was the first Seat of a Patriarch, that St. *Peter* established, and which held in the Infancy of the Church, 1. The Diocesses of *Thrace*, *Asia*, *Pontus*, and the East. 2. *Daphne*, about five miles from *Antioch*, so named from *Daphne*, one of the Mistresses of *Apollo*, who was here worshipped; famous for having here his Oracle and Grove, which was about 10 miles in compass, all encompassed with *Cypresses* and other Trees, so tall and close together, that the Beams of the Sun could not dart through, though in his greatest power; watered with pleasant Streams, beautified with Fountains, and enriched with abundance of Trees, which yield variety of excellent *Fruits*, as well for taste as tincture; for its Temples dedicated to *Apollo*; for its Sanctuary or *Asyle*, and for the place where *Daphne* was changed into a *Laurel*, that it hath been compared with the

the Valley of *Tempe* in *Thessaly*. 3. *Aleppo*, built upon four Hills, at present is the greatest and principal Town of all *Syria*, and one of the most famous of the East, being the ancient *Hierapolis*, having large Suburbs, which are for the most part taken up by *Christians*. It is seated between the *Euphrates* and the *Mediterranean Sea*, and in that place where that *Sea* and the *Euphrates* make the nearest conjunction, which makes it capable of the best and greatest commerce of the World, to wit, of all the *Levant*, with the West, by the passage of the Gulph of *Ormus* and *Balsora*, which brings Commodities up the *Euphrates*, just against the City of *Aleppo*; from whence the *Caravans* bring them by Land to *Aleppo*; and carry them from thence to *Alexandretta*, or *Scanderoon*, situate on the *Mediterranean Sea*; and thence into the parts of *Asia*, *Africa*, and *Europe*, which border upon the *Mediterranean*, and farther into that Ocean. This City is the ordinary residence of a *Turkish Bassa*, who commands all the Country from *Alexandretta* to the *Euphrates*. 4. *Aman*, or *Ama*, seated between *Tripoli* and *Aleppo*, in the midst of a great Plain, encompassed on all sides with very pleasant Hills, abounding in Grains, *Wines*, with abundance of Orchards, stored with varieties of *Fruits* and *Palm-Trees*. It is almost encompassed with the River *Orontes*, and with a great Lake; the Gardens are watered with many Channels, drawn from the Rivers; there are very excellent Pastures, so that *Seleucus Nicanor* there fed 500 Elephants, 30000 Horses, and a great part of his Militia. And to this day this City is the best peopled of all *Syria*, next to *Aleppo* and *Damascus*. 5. *Emsa*, or *Hemz*, seated in the spacious and fruitful Plain of *Apamene*, watered with many pleasant Streams, which, for its Situation, is almost the same with that of *Aman*; and because the *Arabs* call it *Himsl*, and that name comes somewhat near to *Hus*, some Authors will have it to be the Country of the Patient *Job*. 6. *Aradus*, seated in a Rocky Island of a mile in compass, just opposite to the Mouth of the River *Eleutherus*; which from the Continent is distant not above a League. 7. *Seleucus*, so called from him, as being the Founder of it, who was esteemed the greatest Builder in the World, founding 9 Cities of this Name; 16 in memory of his Father *Antiochus*, six bearing the name of his Mother *Laodice*, and three in remembrance of his first Wife *Apamela*. Besides several others worthy of note in *Greece* and *Asia*, either repaired, beautified, or built by him: 8. *Laodicea*, built by *Seleucus* (as aforesaid) abounding in excellent *Wine*, and choice *Fruits*. 9. *Larissa*, now *Laris*, seated four Leagues Southwards of *Laodicea*, much noted in the Stories of the *Holy War*. 10. *Hierapolis*, a City of great note in Ancient times for their Idolatry, in adoring and worshipping the *Syrian* goddesses. The Temple was built by *Syrtone*, wife to *Seleucus*, in the midst of the City, encompassed with a double Wall about 300 Fathom in height, the Roof thereof in-laid with Gold, and built with such sweet Wood, that the Cloaths of those which came thither were as it were perfumed. Without the Temple were places for the keeping of their Oxen, and other of their Beasts for Sacrifice; as also a Lake of about 200 Fathom in depth, for the preservation of their sacred Fishes. The Priests, besides other subservient Ministers, which here attended, were about 300 in number. 11. *Zeugma*, seated on the Banks of the *Euphrates*. Here it was that *Alexander* the Great, with his Army, passed over on a Bridge of Boats. 12. *Hevaclea*, nigh to which *Minerva* had a Temple, where, for a Sacrifice, they used once a year to offer a Virgin, which afterwards was changed to a *Hart*. 13. *Samosata*, seated near the Banks of the *Euphrates*, over which there was a Bridge which served for a passage to *Mesopotamia*. In this City was born *Paulus Samosatenus*, Patriarch of *Antioch*, who, for his teaching that our Saviour was not the Son of God, was (in a Council here held) condemned of Heresie. 14. *Palmyre*, at present *Paid*, seated in a Desert and Sandy Plain, was built by *Solomon* in the Wilderness, where one their Kings *Odenis*, and his wife *Zenobia*, have been well known for their Victories, divers times gained against the *Parthians*; and for endeavouring to gain the Empire of the East. 15. *Resapha*, a Town of great note in the Holy Scripture: And, 16. *Adraa*, memorable for the Victory that *Aretas*, K. of *Arabia*, obtained against *Alexander*, K. of *Jewry*.

PHOE.

P H O E N I C I A

Phœnicia
bounded, and
its Cities, &c.
described.

PHœNICIA hath for its Eastern and Southern Bounds, *Palestine*; for its Western, the *Mediterranean Sea*; and for its Northern, *Syria Proper*. This Country was adorned with several great and beautiful Cities, though of no great extent: For the most part seated on the Sea-shore, which makes it much frequented by Merchants, there being several good Commodities found therein, as *Corn, Oil, Honey, excellent Balm, &c.* The People were here held to be very ingenious and active. Places of most note are, 1. *Tyre*, at present *Sor* or *Sour*, seated in a Plain so advantageous, (that is, on a Rock almost quite encompassed with the Sea), that it oft disputed the Priority with *Sidon*, and in the end gained it. *Nebuchadonozor* ruined it after a Siege of 14 years; then *Alexander the Great*, after a Siege of 7 or 8 months. It was many times restored to its power and splendor, by means of its *Purple*, and of its Trade; and when it was in its glory, it might be said, That if only its situation were considered, it was a *Fortress*, if its Traffick, a *Mart*; if its Magnificence, a *Royal Court*; and if its Riches, the *Treasure* of the Universe. The Cities of *Gartbage, Utica, Leptis*, and others in *Africa*, and of *Cadiz* in *Spain*, without the *Streights* were its Colonies. And some have adventured to say, *America* was peopled by them. Its Haven is likewise the best of all *Phœnicia*, and the *Levant*. 2. *Sidon*, at present *Sayd*, and sometimes *Sayette*, hath been much esteemed in the Ancientest of times: It was built, or at least took its name from *Sidon*, the eldest Son of the Children of *Canaan*, situate upon a Rock along the Coast of the Sea, and with a fair Port. The Neighbouring *Champaign* is very fertile, and watered with divers Streams which descend from *Libanus*, with which they watered and enriched their pleasant Orchards. It hath been very famous for Arts and Sciences, and particularly for being the first Authors of *Aritbmick* and *Astronomy*; The first Inventors of *Letters*; the first Navigators and Builders of *Ships*; the first Inventors of *Glasses*; and the first that exercised *Arms*. From hence it was that *Solomon* and *Zorobabel* had their principal Workmen, both for *Stone* and *Timber*, which were employed in the Building of the *Temple*. It hath Peopled divers Colonies; among others, *Thebes* in *Ægyptia*. The *Persians* were the first that ruin'd it, after them others, and at last the *Turks*; who at present are Masters of it, as also of *Tyre*. The present *Sidon* is built somewhat West of the Old; but of small note in respect to the splendor of the Old, yet still hath some Trade. The chief Commodities being *Corn, Galls, Wools, Cottons, Cotton-Tarn, white Silk, and Wax*. 3. *Damascus*, called by those of the Country *Scham*; seated in a very fruitful Plain, and begirt about with curious and odoriferous Gardens and Orchards, which abound in all sorts of pleasant and delightful Fruits: watered with the River *Chrysorrhous*, which sendeth forth many Rivulets; by which the whole City is so well furnished, that not only most Houses have their Fountains; but also their Gardens and Orchards receive the benefit of the cool Streams, which gently glide through them: The whole Country round about being enriched with plenty of excellent *Vines*, which beareth *Grapes* all the year long; as also great plenty of *Wheat*. A place so surfeiting of Delights, that the vile Impostor *Mahomet* would never enter into it, lest by the ravishing Pleasures of this place he should forget the business he was sent about, and make this his *Paradise*. This City is famous, first, for her Founders, who were *Abrahams* Servants; next for the Temple of *Zacharias*, which was garnished with 40 stately *Porches*, and adorned with about 9000 *Lanterns* of Gold and Silver; and last of all, for the Conversion of *St. Paul*, who here first preached the Gospel; for which he was forced to make his escape out of the House, being let down the Walls in a *Basket*. *Josephus* believeth, that it was built by *Us*, the Son of *Abraham*, Grandchild to *Noah*: However it were, after *Tyre* and *Sidon* began to decay, this began to be in some repute, and hath been esteemed the

The fertility
of the Coun-
try.

the chief City of *Phœnicia*, and sometimes of all *Syria*. It is beyond *Mount Libanus*, in respect to *Tyre* and *Sidon*; seated in a Soil so fertile and delightful, by reason of the Rivers and Fountains; that in Holy Scripture it is called a famous City, a City of Joy, a House of Delight and Pleasure; and some Authors call it the *Paradise of the World*. Yet hath it felt very great changes, as well as *Tyre* and *Sidon*: It hath been taken, retaken, ruined, and re-established divers times, by the *Assyrians, Babylonians, Persians, Macedonians, Romans, Parthians, Saracens, Tartars*; by the *Soldans* of *Egypt*, and in fine, by the *Turks*, in whose hands it is at present, very flourishing and rich. The Houses of private persons are not so fair without as within; the publick Buildings are very beautiful; the Castle is in the middle of the City, built by a *Florentine*. 4. *Serepta*, seated on the Sea-Coast betwixt *Tyre* and *Sidon*, memorable in Holy Scripture for the Prophet *Elijah*, in raising from death the poor Widows Son. Here is found excellent *Wines*, accounted as good as those of *Greece*. 5. *Acra*, of old *Acon*, and *Ptolemais*, is bounded with the Sea on two sides; the third is joyned to a Plain of the Continent. The City is very strong, being walled with a double Wall; fortified throughout on the outside with Towers and Bulwarks, and in the middle of the City a strong Castle, on the top of which there was every Night for Lights, which served to direct Ships at Sea to their Port. The Plain is fertile and well watered with Streams, which descend from the Neighbouring Mountains. The *Christians* took, lost, and retook this place divers times, when they made War into the Holy Land; in which, none more famous than *Richard the First*, and *Edward the First*, both Kings of *England*. The same did likewise the *Saracens*; the *Soldans* of *Egypt* ruined it, and after re-built it; and at present it remains in the hands of the *Turks*. 6. *Tripoli* of *Syria*, (for distinction from *Tripoli* of *Barbary*) seated in a rich Plain, is at this day by some esteemed the Metropolis of *Phœnicia*, though it hath three times more Ruins than whole Houses; and seated about two miles from the Sea, but not above half a mile from its Haven, which formerly served for a Port to *Aleppo*; but since removed to *Alexandretta* or *Scanderone*. But yet a place of some small Trade, affording *Corn, Cotton-Wool, Tarn, Silk*, some *Drugs, Pot-Asbes*, and other Commodities. The Buildings are generally low, and the Streets narrow, excepting those which lead towards *Aleppo*, which are fair and broad; having many pleasant Gardens, which are watered with delightful Streams, in which Gardens they keep great quantities of *Silk-Worms*. The Soil is excellent good, if it were well tilled; but the Air is unhealthful. 7. *Biblus*, now *Gibbelith*, was the habitation of *Ciniras*, the Father of *Myrrha*, Mother to the fair *Adonis*; from whence the neighbouring River took its name, remarkable in the infancy of *Christianity*, for being the See of a *Bishop*; but now by the *Turks* made desolate. And, 8. *Barust*, or *Beryte*, a place formerly of great Trade, but now of great concourse, and much frequented by Merchants, and others; it being the Road for all those *Caravans* that travel from *Aleppo, Damascus*, and *Jerusalem*; to *Cairo*, and *Mecca*. It is subject to the Grand Signior. Near to this Town is that noted Valley, where (as some Authors say) *St. George* by killing the Dragon; which had his abode in a Cave here, redeemed the Kings Daughter, which was to be delivered to his fury.

PALESTINE.

PALESTINE, formerly called *Judæa, Canaan*, or the *Holy Land*, is bounded on the East with *Mount Hermon*, so much spoken of in Holy Scripture; on the South, with part of *Arabia Petrea*; on the West, with the *Mediterranean Sea*, and part of *Phœnicia*; and on the North, with the *Anti-Libanus*, which separates it from *Syria* and the rest of *Phœnicia*. Its situation is between the Third and Fourth Climates, which makes the longest day to be 14 hours and a quarter. So populous, that before the coming in of the *Israelites*, they had 30 Kings; and afterwards *David* numbred 1300000 Fighting.

G g

Fighting men, besides those of the Tribe of Benjamin and Levi. This last and most Meridional part of Syria, which we call *Palestine*, first received the name of the Land of Canaan, because the Children of Canaan first seized it, and parted it amongst them; when God had promised it to Abraham and his Posterity, it was called the Land of Promise; but when it fell into the hands of the Hebrews, after their return from Egypt, and that they had divided it by Tribes, it took the name of the Land of the Hebrews, under which it was governed by Prophets, Judges, and Kings; but under these Kings it was soon divided into two Realms, which they called Judah and Israel. Under the Romans it was only known by the name of Judea, or Palestine: of Judea, because that the Tribe of Judah was always the most powerful of the Twelve; and the Kingdom of Judah the most noble, and preserved itself longer than that of Israel: of Palestine, because the Philistines, which possessed a part of the Maritim Coast of Judea, were powerful, and very well known to Strangers. After the death of our Saviour Jesus Christ, all this Country was called the Holy Land. The People which anciently possess this Country were the Jews, being of a middle stature, strong of body, of a black complexion, goggle-eyed, a subtle and ingenious people, and such as will live in any place, much given to Traffick, Usury, and Brokage; not lending without Pledges, and taking the forfeitures of them. Their Law or Religion was given them by God the Father, which, with the several Ceremonies and Rites, soon prescribed to them, may be found in the five first Books of Moses; their Synagogues are neither fair within nor without, save only adorned with a Curtain at the upper end, together with several Lamps, and in the midst is placed a Scaffold, in form of a Reading-Desk, for their Priest, which readeth their Law, and sings their Liturgy; they read in a strange tone, and sing as badly during the time of their Service, their heads are veiled with Linnen fringed with Knots, answerable to the number of their Laws, and observing a continual motion of their body to and fro, and often jumping up, which they account for great zeal in their devotion; they observe much reverence to all the names of God, but especially to *Jehovah*, inasmuch that they do never use it in vain talk. Their ancient Language was Hebrew; they keep their Sabbath on Saturday, in which they are very strict; they marry their Daughters at the Age of 12 years, as not affecting a single life. This Country is so fertile in all things, that it was termed a Land flowing with Milk and Honey; adorned with pleasant Mountains and luxurious Valleys, enriched with pleasant Streams; and where the Inhabitants are neither scorched with Heats, nor pinched with Colds. To speak of all the memorable transactions that have happen'd in this Country would require a Volume by it self; I shall only run over some of the chief, and then proceed to the description of some of the Cities and Places of most note that are found therein. It is famous for bringing our Saviour Jesus Christ into the World, where he wrought so many Miracles; but infamous for their horrid action of crucifying him, the Lord of Life. Here it was that the Lord appeared to Jacob; here, out of the Plains of Moab, the Ark was built of Sittim Wood; here, on Mount Tabor, Christ was transfigured; on Mount Moriah, Isaac was to be sacrificed; on Mount Zion was the Tower of David; on Mount Calvary, as some aver, was the Burial-place of Adam, our Forefather. Here, over the Brook Kedron, David passed in his flight from Absalom; over which our Saviour, when he went to his Passion, passed: Here runneth the River of Jordan, sufficiently famous; nigh to which stood the Cities of Sodom and Gomorrah: Here, at a place called Endor, Saul consulted with a Witch; near to Sichem, Jacob had his Wells: Here, at Asdod, in the Temple of Dagon, the Ark of the Lord was brought, when taken; upon the entrance of which their Idol fell down: Here, at Hebron, is the Plain of Mamre, where Abraham, sitting in his Tent, was visited by God from Heaven in the likeness of a Man; this City he bought for a Burial-place, for him and his Posterity, where Sarah his Wife was first interr'd: And on Mount Seir was the habitation of Esau, after his departure from Canaan. I shall cease to trouble the Reader with the mentioning of many more remarkable Passages which were here transacted, but

A description of the Jews, and their Religion.

The fertility of the Country.

Memorable Transactions in this Country.

but only refer them to the Books of the Old and New Testament, where they shall find them recorded; also great satisfaction may be received from Josephus, a Book of good repute.

This Country is at present possessed by the Turks, as Masters of it, but inhabited by *Muslims*, *Arabians*, *Greeks*, *Turks*, *Jews*, &c. I may say with people of all Nations and Religions; But setting aside matters of History, let us proceed to say something of the principal places found therein, and first with Jerusalem.

Jerusalem is so well known in the Holy Scriptures, that we must confess it hath been not only one of the greatest, but one of the fairest Cities in the World, being called the City of the Lords, Its Kings, High Priests, Temples, and Royal Palaces, have made it famous even amongst the remotest people; its circuit was once 50 Furlongs, which are only 640 Geometrical Paces; but so well builded, that it was capable of the receiving of 14,000 Families; its Temple and Palaces, especially those of Solomon, were the fairest, greatest, and most magnificent which ever eye beheld: its Gates, Walls, Towers, Ditches, and out of the Rock; and its situation in the Mountains made it seem impregnable. This City, once sacred and gloriously elected by God for his Seat, placing it in the midst of Nations, like a Diadem, crowning the head of the Mountains, the Theater of Mysteries and Miracles, was once the glory of the World, but its Pride, and other horrid Sins in the end lost it divers times. Nebuchadnezzar was the first that ruin'd it; Pompey contented himself to dismantle it of its Walls; and to stop the Ditches; Vespasian and Titus Caesar utterly razed it, and destroyed in the place 110,000 People that were assembled to the Passover; Adrian ruined likewise some Towers and Walls, which had been left to lodge the Roman Garrison; and after caused a new City to be built, partly on its ancient Ruins, and partly without them. But with the divers changes it hath since fallen under, its beauty and magnificence is quite decayed. Yet is it not so lost, but that there are several Places yet remaining worthy of note, together with several others that were since built; as on Mount Calvary, where Christ the Saviour of the World was Crucified; there is a rich, magnificent and large Temple, built by the vertuous Helena, Daughter to Constantine, a British King, and Mother to Constantine the Great, which not only possesseth the Mount; but also all the Garden below, where his Sepulchre was; and in this Temple there are several rich Structures, as one where Christ was imprisoned before his Crucifixion, another where Christ was nailed to the Cross, another where he was Crucified; also one where the Sepulchre was, the Altar of the Holy Cross, the Altar of the Scourging, the Chapel of the Apparition, the Chapel of the Angels, the Chapel of the division of his Garments, the Chapel of St. Helena, who built this Temple, the Chapel of St. John, the Sepulchre of Joseph of Arimathea under ground; together with several others, too long to recite. To this place there is a great resort, as well of Protestants as Papists, though for sundry ends, which brings a great Revenue; none being permitted to enter without paying some Money, which the Jews here inhabiting do Farm of the Grand Signior at a large yearly Revenue, and so become Masters thereof, making a great profit by shewing them to Strangers, which come hither from all Nations. Several other places are yet remaining; as the Castle of the Pisans, the Monastery of the Franciscans, the Church of St. James; the Church of St. Mark, where once stood his House; a Mosque, where stood the House of Zerbedaus; a Chapel, where stood the House of St. Thomas; the Church of the Angels, where the Palace of Annas the High Priest stood; the Church of St. Saviour, where the Palace of Caiaphas stood; the Court of Solomons Temple, yet remaining; but in the room of the Temple a Mosque.

Near about Jerusalem there are several places of note yet remaining, as in the way between Jerusalem and the City of Bethlem, there are the Ruins of Davids Tower, the Tower of Simeon, Bathshebas Fountain, the Cistern of Sager, the Monastery of Elias, Jacobs House, the Sepulchre of Rachel, the Cistern of David, the House of Joseph, the Monastery of Bethlem, the Monastery

Jerusalem, its chief Places.

mastery of the Holy Cross. And at *Bethlehem*, over the place where *Christ* was born, the vertuous *Helena* erected also another fair and goodly Temple, which is posselt by the *Franciscans* of *Jerusalem*, being called by the name of *St. Maries* of *Bethlehem*. Nigh to *Jerusalem* is the Desert of *St. John Baptist*, where is yet the Ruins of a Monastery over his Cave, and the Mountain; as also the Mountains of *Judah*, where is the Church of *St. John Baptist*, the Mountain, and the House of *Elizabeth*, also the Sepulchre of *Zachary*, a part of the Pillar of *Abalon*, and the Cave of *St. James*. At *Bethania*, two miles from *Jerusalem*, is the House of *Simon*, the Leper, the House of *Lazarus*, as also his Sepulchre, where is the Mount of *Olivet*, where is the Sepulchre of the *Virgin Mary*, where *Christ* was often, and from whence he ascended up into Heaven.

Toppa, or *Staffa*, serves for a Port to *Jerusalem*, from which it is 10 miles distant; and it was thither that the Wood and Stones, taken from Mount *Libanus*, and destined to the building of the Temple of *Solomon*, were brought by Water, and from thence by Land to *Jerusalem*. This is the Port where *Jonah* embarked to flee from the face of the Lord. From this History the Heathens made the Fable of *Andromeda*, and pretended to show in the Rock, which is before the Port, the marks of the Irons, to which *Andromeda* was chained, and exposed to the Sea-Monster.

After *Jerusalem* there rests yet *Gaza*, now *Gazera*, greater and better inhabited than *Jerusalem*. *Jericho*, seated on the River *Jordan*, about 30 miles distant from *Jerusalem*, a City once of great fame, being in the time of *Christianity* an Episcopal See; also noted for her beautiful Palms; but especially for her *Bulmum*; but now turned to Ruins, in the place whereof stands a few poor Cottages, inhabited by the *Arabians*. *Samaris*, once the Seat of the Kings of *Israel*, hath now nothing left but the Ruins of some proud Buildings. And, 3. *Sichem*, now *Naplaufe*, hath some *Samaritans*, and remains the Capital of that Quarter, and the best inhabited, but with many Ruins; and to speak truth, there is now scarce any place of mark in all the Holy Land; whereas under the *Cananites*, under the *Hebrews*, under the *Jews*, there were so many People, so many Kings, so many Cities, so rich, and so powerful, that throughout the whole Continent of the Earth there was no Country might compare with it. *Jerusalem* is at present governed by a *Bassa*, and *Naplaufe* by another, which obey the *Beglerby* of *Damascus*.

D I A R B E C K.

Diarbeck, and its Parts.

DIARBECK, taken particularly, answers only to *Mesopotamia*, which is but part of the ancient *Assyria*; taken in general, it answers to the three parts of that *Assyria*, of which the particular *Assyria* is now called *Arzerum*, *Mesopotamia*, *Diarbeck*, and *Chaldea* or *Babylonia*, or *Ierack*. The first is the most *Oriental*, and almost all beyond the *Tygris*; the second the most *Occidental*, and is between the *Euphrates* and the *Tygris*; the third the most *Meridional*, and lies on both sides the *Tygris*.

Its fertility and People.

This Country of *Chaldea*, now *Ierack*, is for the most part exceeding fruitful, yielding ordinarily 200 fold, the blades of their *Wheat* and *Barly* being about four fingers broad, having yearly two Harvests. The People anciently were much given to *Divinations*, *South-sayings*, and *Idolatry*. Places of most note are, 1. *Babylon*, formerly *Babel*, the ancientest City in the World, seated on the Bank of the *Euphrates*, first built by *Nimrod*, and much enlarged and beautified by *Nebuchadnezzar*; so that it was accounted one of the nine Wonders of the World. This City was so vast, that its Walls stretcht in circumference 365 Furlongs, in height 66 Yards, and in breadth 25, situate on both sides of the *Euphrates*, which also ran through the City, emptying it self into divers *Rivulets*; over this River *Euphrates* there was a stately Bridge, at each end of which there was a sumptuous *Palace*, beautified also with the Temple

Its chief places.

Temple of the Idol *Bell*; the whole City being adorned with fair Buildings, stately *Palaces*, and *Temples*, with a number of fair and large Streets, famous for its Tower of *Babel*, which exalted it self 5164 Paces in height, which is something above 5 miles, having its basis or circumference equal to its height. A City once esteemed the Mistress of the World, and so rich, that it is said, that *Alexander* at his taking it found treasured up 200000 Talents of Gold, (a Talent of our Money being esteemed at 4500 Pounds) a vast Treasure; but the sins of the People drew the wrath of God upon it; and by reason of its Invasions by the *Medes*, *Persians*, and *Macedonians*, who subdued it, so ruined, that it soon lost its pristine glory and magnificence, being reduced to Ruins; out of which was raised a new City called *Bagdad*, so named from its many Gardens therein contained, but not to compare to the old *Babylon*, neither in largeness nor glory, being not above 7 miles in compass, but yet remains to this day a place of great Trade; between which and *Aleppo* are found many *Caravans* to travel with many thousand *Camels* laden with rich Commodities brought from *India*, and elsewhere, abounding with the same Commodities as *Aleppo* doth. At this place they make use also of *Pigeons*, as they do at *Alexandretta* and *Aleppo*, which serve instead of *Posts*, which, when occasion serveth; as upon the arrival of *Ships*, *Caravans*, or the like, they take these *Pigeons* and tie an Advertisement (which they write in a little piece of Paper) about their Necks, which done, they carry the *Pigeon* to a high place, and toss it up, and immediately it flieth to the other place to which it is designed, which gives notice to them. The Palaces in this City most worthy of note are, the *Mosque*, a large and rich Structure, built of *Free-stone*, resembling *Marble*, in form orbicular; then the *Sultans Palace* adjoining to the *Buzzar*, or great Market-place, is a rich, large, but low Fabrick; next the *Bridge*, whose passage is over Boats, which are chained together, which, upon occasion may be separated; having resemblance to that of *Roan* in *Normandy*; and lastly, its *Coho-houses*, which are Houses of Good-fellowship, being in the nature of *Coffee-houses* with us, which in this place are many, to which a great resort of People cometh to sip *Coffee*, which by them is highly esteemed, as indeed by most People in these Regions. 3. *Balsera*, the Port-Town to *Bagdad*, seated near the place where *Tygris* loses it self in the *Persian Gulph*; which is likewise called the *Gulph* of *Balsora* and *Ormus*. This City is said to have 10000 Houses, and answers to the ancient *Teredon*. 4. *Goufa*, was sometime the Seat of the *Califfs*, and near it was *Ali* inter'd; whence it hath likewise been called *Masad-Ali*, or *Merat-Ali*, the House of *Ali*; and there is always a Horse kept ready to mount *Mahomet Mahadin*, the Son of *Almanfor*, the Son of *Ocem*, the Son of *Ali*, when he shall come to convert the whole World to the Law of *Mahomet*; for this Conversion is to begin at *Coufa*; but they hitherto have had, and may for the future have time enough to curry their Horse, expecting the coming of their *Cavalier*. 5. *Orchoe*, now so called, is the *Urchoa* of *Ptolomy*, and *Ur*, the place of *Abrahams* Nativity. 6. *Borsippa*, by *Ptolomy* called *Barfita*, famous for the great Victory which *Cyrus*, the first *Persian* Monarch, here obtained against *Nabonius* King of *Babylon*. 7. *Ctesiphon*, seated on the *Tygris*; And, 8. *Sipparum*, noted for the great Trench made near it, which was made to receive the overflowings of the *Euphrates*, which was in compass 160 miles, and in depth 20 Fathoms, which was made to preserve the City of *Babylon* from overflowings.

Bagdad and *Balsera* have each their *Beglerbies*, and many *Sangiaks*; but to speak truth, sometime the *Turk*, sometime the *Persian* possesses these Quarters; the last took *Bagdad* in the year 1624, which the *Turks* regained in 1638. Fame now speaks it the *Persians*.

Babylon, now called *Bagdad*.

MESOPOTAMIA.

Mesopotamia
bounded,
and
its fertility.

Its chief
Place
is
Bassorah.

MESOPOTAMIA, bounded on the West with the *Euphrates*. The Southern part of this Country is very barren and full of *Deserts*, scarce affording any *Herbage*, nor hardly so much as *Trees*. But as this part is so much deficient, that towards the North hath as great plenty, which makes amends, abounding with great store of *Corn*, and *Wine*, together with all such necessaries as are required for the life of man. Places of most note are, 1. *Robat*, or *Orpha*, which is the ancient *Edesse*, being 10 miles in circuit, situate on the River *Scirtis*, which passes through the midst of it, nor far from the *Euphrates* into which it falls. 2. *Garaemid*, anciently *Amida*, seated near the *Tygris*, encompassed with a strong Wall, a Frontier Town of great strength, being much desired by the *Persians*; now the chief Seat of the *Bassa*, which governs this Country for the *Turk*, where the Patriarch of the *Jacobite Christians* also had his residence. 3. *Mardin*, not above 4 or 5 miles in circuit, but is very strongly seated on a high Mountain, and having a *Castle* of about a mile in circumference; not far from which, in the Monastery of *Sophran*, is the Patriarchal See of the *Jacobite Sectaries*. 4. *Alanghis*, esteemed the Metropolis of the Country, yet not being of above 4 or 5 miles compass, but hath four great Suburbs well filled with Inhabitants. 5. *Carra*, where *Cassius* and the *Romans* were defeated, is now called *Herren*, or *Harren*, the City to which *Abraham* did remove when he went towards *Canaan*; remarkable in former times for its famous Temple, dedicated to the *Moon*, which was here worshipped under both Sexes. 6. *Jamilcasack*, not far from *Edesse*, hath its *Castle* seated very advantageously. The *Castle* of *Corna*, that is pointed, is one of the most important places the *Turks* possess in all these quarters, being built above the place where the *Tygris* and *Euphrates* meet, to keep in awe both these Rivers: And 7. *Virta*, by some Authors supposed to have been built by *Alexander the Great*, encompassed with Walls, and fortified with Towers and Bulwarks, that it was in a manner impregnable.

A S S Y R I A.

Assyria bound-
ed.
Its People, and
their Customs,
&c.

A S S Y R I A, particularly so called, hath for its Western limits *Mesopotamia*, and is called at this day, *Arzerum*. A Country very fruitful, seated in a Plain, and watered with several good Rivers; the People were anciently much addicted to Martial-affairs, yet very demure in their Habit and Behaviour, not going out of their Doors without first being perfumed, adorned with Rings on their Fingers, and a Scepter in their Hands; they were much given to *Bathing*, and especially after Copulation. In their *Nuptial Ceremonies*, they never see the Woman until they are married; but when they hear a good Report of a Maiden, being such as liketh them, they go to her Parents, and with them agree; which done, on an appointed time they meet in the Church, in such a part of it as is designed for that use, where there is a Partition with a Hole in it: on one side the *Bridegroom* and his Friends stand, and on the other the *Bride* and her Friends; then the *Casside* or *Priest* bids the *Bridegroom* put his hand through the Hole, and take his *Bride* by the hand; which no sooner done, but her Mother, or some other of her Friends, being prepared with a sharp Instrument, pricks his hand all over; and if he doth not pull away his hand when he is so pain'd, but still holds her so fast that she cries, they hold it a sign that he will love her; and if he lets her go, a sign of no great love.

Chief places
in Assyria.

Places of most note: 1. *Ninive*, first built by *Nimrod*, and afterwards so enlarged by several succeeding Kings, that it became at last to exceed *Babylon*, as well in largeness as otherwise; its Walls being in circuit 60 miles, being about 33 yards

33 yards in height, and 24 in breadth; and on whose Walls there was (for further strength) 500 Towers, or Towers, which made it to be thought impregnable. To this City the Lord sent *Jonah the Prophet*, to Preach Repentance to them; but afterwards for their Sins, it was destroyed by *Assyges* King of the *Medes*, out of whose Ruins the City *Babul* was raised, which at present is the chief City of *Assyria*, seated on the *Tygris*, most eminent for being the residence of the *Nestorian Patriarch*, where are founded 13 *Christian Churches*. It is enclosed within a Wall, and is the residence of a *Bashaw*, a place much ruined, but of note for the great concourse of Merchants, this being a thoroughfare City. 2. *Scherchazuli*, or *Schabrazar*, is very near to *Babul*, and is the Seat of a *Turkish Beglerbey*, or *Bassa*, who hath 10000 *Turk* Soldiers under his command, for the defense and security of this Country. It is near to, if not the same as *Arbela*; renowned for the Victory of *Alexander the Great* against *Darius*, and is said to retain its ancient name, and to be an *Archbishoprick* of the *Jacobites*. 4. *Gaghamela*, noted for the last and greatest Battle betwixt *Alexander* and *Darius*; King of *Persia*, in which *Alexander* gained the Victory. 5. *Calach*, built by *Nimrod*, being one of the Cities to which *Salmansar* transplanted the *Ten Tribes*. 6. *Arbela*, seated on the Banks of the River *Caphus*, by some supposed to be the place where *Noah's Ark* was framed: And 7. *Sittace*, pleasantly seated in a fruitful Soil.

TURCOMANIA.

TURCOMANIA, or *ARMENIA MAJOR*, touches the *Caspian Sea* between *Georgia* and *Seruan*; and on the *Black Sea*, between *Anatolia* and *Georgia*, it extends from East to West little less than 600 Leagues, and from South to North, 150 answering to the great *Armenia* of the Ancients.

Some divide it only into two sorts of People, the *Turcomans* and the *Curdes*; I would add at least the *Armenians* and the *Georgians*, these possessing a great part of the Country as well as the others, who are the natural and most ancient Inhabitants: for the *Turcomans* are esteemed to descend from *Targuisch* in *Tartary*, from whence come the *Turks*, and to whom they are most resembling; the *Curdes* descend from the ancient people of *Assyria*, *Mesopotamia*, *Chaldea* or *Babylonia*; the most Easternly of these three parts being yet called by the *Turks* and by the *Persians* *Curdisthan*, or the Country of the *Curdes*; and the *Georgians* descend from *Georgia*, which is, above, and contiguous to our *Turcomania*.

Of these four sorts of People, the *Armenians* are the most industrious and civil, addicting themselves to Merchandize, as appears by their Manufactures, especially in their rich *Tapestries*, *Grograins*, *watered Chamlets*, &c. with which they drive a trade; being also proper Personages and good Architects. The *Turcomans* apply themselves to the Field, and to look after their Flocks; the *Curdes* are almost ever on Horse-back, having much of the *Arabick* Nature: the *Georgians* are the most docile, and the most peaceable. The *Turcomans* and the *Curdes* are *Mahometans*; the *Georgians* and *Armenians*, the greatest part *Christians*. And the *Armenian* Tongue is one of the most general in all *Asia*; extending it self likewise other where, and having *Armenian* Patriarchs and Bishops, not only in *Armenia*, but likewise in *Anatolia*, *Persia*, the *Holy Land*, *Egypt*, *Russia*, and *Polonia*.

Amongst the Ceremonies observed by the *Armenians*, I shall take notice of some few, as I find them in the Travels of *Tavernier*. They are very costly in adorning their Churches, especially the *Choir* and the *Altar*; at the ceremony of the *Mass* they light abundance of *Tapers*, and after the *Gospel* is read, several of the *Novices*, some having Bells fixed to long Sticks, and others having *Copper-plates* hung about with Bells, shaking and striking them one against another, together with the *Ecclesiastics* and *Laitie*, who sing, and make an indifferent harmony; during which the *Archbishop* and *Bishops* per-

forms

forms several Ceremonies, and says certain Prayers; which being done, having the *Chalice* in his hand, and the *Bread* upon it, he turns towards the People, who immediately prostrate themselves on the ground, bearing their Breasts, and kissing the Earth, whilst the Archbishop pronounceth these words, *This is the Lord, who gave his Body and Blood for you*: then he turns towards the Altar, and eats the *Bread* dipped in *Wine*, (for they never drink the *Wine*;) then he turns again to the People with the *Chalice* in his hand, and they that will receive, taking the *Bread* from the Archbishop; and this *Bread* is consecrated the day before. That which is observable amongst them; they give the Communion to Children of 2 or 3 Months old; and they never administer the Sacrament all the time of their *Lent*. They have four Feasts in the year besides their *Lent*; at which times they observe the same Ceremonies as at *Lent*; eating no *Flesh, Fish, Butter, Eggs, or Oil* for 8 days; the Feasts are *Christmas, the Ascension, the Annunciation, and St Georges*.

When a man designs his Son for the Priesthood, he brings him to the Priest, who puts the *Cope* about his Shoulders, open on both sides; after which he takes him home, and keeps him till the age of saying *Mass*, which is 18 years; then he goes into the Church, out of which he is not allowed to depart for a year, during which time he is employed in the service of the Church. And the Priest that is married after he hath said *Mass*, must be 5 days before he returns home to eat, drink, or lie with his Wife.

They generally Baptize their Children on *Sundays*, which is performed by putting it naked into the Water, then gives it to the Godfather, anoints it in several places in form of the *Cross* with holy Oil, and pronounceth these words, *I baptize thee in the name of the Father, the Son, and the Holy Ghost*; and sayeth several Prayers suitable to the occasion.

In their *Marriages* the Ceremonies are too many here to repeat: I shall take notice of some few. They are permitted to marry at 3 or 4 years of age; the agreement is made betwixt the Mothers, or for want of them, by the Females next of kin; which agreement the Father stands unto, and after a Ring is presented to the intended Bride, the Contract stands. The *Bridegroom* and *Bride* never see each other till after the Nuptial Ceremonies are ended, both riding to the Church with their faces Veiled; the *Bridegroom* is a *Carnation Tiffany*, or else *Gold and Silver* Net-work; and the *Bride* with a large white Veil, which covereth her body; thus Riding, they are attended by their Relations and Friends with *Tapers* in their hands, also the *Drums, Trumpets*, and other Musical Instruments wait on them to the Church-door: being entered and advanced near the Altar, they lean Forehead to Forehead, then the Priest lays the Bible on their Heads (instead of a Desk) and so pronounceth the Ceremony, which is much like ours; after the *Benediction* they hear *Mass*, and so return to the House of the *Bride*. At their Feasting the Men sit by themselves, and the Women by their selves; the Man goeth to Bed first, and the Woman pulleth off his Breeches; but putteth not off her Veil till Candles be put out; and at all times of the year the Woman riseth first, so that the poor *Bridegroom* knoweth not whether he hath met with a Beauty, or a course and ill-favoured piece of flesh; but be she what she will, he must keep her.

About their Dead; the Body is washed, wherein is put some Holy-water, then it is drest with a clean white Shirt, a pair of Breeches, a Waist-coat, and a Bonnet; then it is put in a Linnen-Sack, and sewed up; then it is carried to the Church, accompanied with the Friends and Relations of the deceased, who carry in their hands *Tapers*, and being come to the Altar, after some Prayers are said, they leave the Corps there all Night; the next Morning the Bishop or Priest, attended as before, says *Mass*; several Prayers being said, and Dirges sung, the Corps is put in the Grave; and the Bishop casts 3 handfuls of Earth in, one after another, saying, *From earth thou comest, to earth thou shalt return, and stay there till our Lord comes*; then the Grave is filled up, and the Relations and Friends that will, go back to the House of the Deceased, where a Oblation is prepared. These, with many other Ceremonies, are performed by them.

The

The Air is healthful, though its temperament be cold, because of the Mountains and Hills, which overspread the Country; but intermixt with fertile and delightful Valleys, the Soil producing more Grain and Fruits than Vines; It yields *Bolearmontack, Honey*, and, towards *Servan, Silk*, together with some Mines of *Silver*. The Pastures are every where excellent, and particularly for *Horses*, of which they make great account; for when *Armenia* was subject to the ancient Kings of *Persia*, it furnished them yearly with 20000 *Horses*. At present the *Turks* possess the greatest part of the Country, and keeps still, or did not long since, *Baglerbies* at *Erzerum, Cars, Revan, Van, Schildir, Teflis*, and *Derbent*; besides, which there are many Cities of considerable note, some of which the *Persians* hold.

1. *Erzerum*, on the *Euphrates*, near the black Sea, on which, and not far from *Erzerum*, is *Trebisonde*, which facilitates a great trade between the East, West, and North; for coming from the *Indian Ocean* by the Gulph of *Ormuz*, and so up the *Euphrates*, they may receive passing by what comes from the West to *Aleppo*, and carry it unto *Erzerum*; from whence, to *Trebisonde* by land, is not above 25 or 30 Leagues. 2. *Cars, Chars*, or likewise *Chiffery*, is four or five days Journey from *Erzerum* towards the East, on the River *Euphrates*; it hath been taken and retaken divers times by the *Turks* and *Persians*. The same may be said of *Revan, Schilder*, and *Van*: this last is not great, but well Walled, and with greater Ditches, and hath a Castle whose situation is such, as renders it almost inaccessible. 3. *Teflis* is likewise in some esteem at present, but much more formerly under the name of *Artaxata*, which *Artaxias*, Father of *Tigranes* King of *Armenia*, caused to be builded and fortified at the persuasion of *Hannibal*. 4. *Derbent*, of great antiquity, being supposed to have its foundation laid by *Alexander the Great*; who also erected that no less great than strong Castle, which is called *Kastow*, adjoining to the said City, which is the greatest and most ordinary passage between *Turcomania, Persia*, and other Southern Provinces of *Asia*, to *Zuire*, the Kingdom of *Astracan*, and other more Northern Estates of *Europe* and *Asia*. Its situation is upon the utmost Mountains, which regard the *Tabarestan*, or the *Caspian Sea*: and all is so well fortified, that the *Turks* have took occasion to call the place *Demir*, or *Temir Capi*, or the Port of Iron: and the name of *Derbent* signifies a *Streight Port*; and in all likelihood these are the *Caspæ Ports*, so famous among the Ancients; because that in the black Sea, and the Sea of *Tabarestan*, which is about 3 or 400 thousand Paces: It is all high, Mountainous, and hard to be passed; and if there be any passages, they are infamous for Robberies and Incursions, which the Inhabitants of the Countries, or the Princes which possess them, make. This City is a place of great strength, being invironed with two strong Walls, and fortified with *Towers* and *Iron-gates*, being accounted the Key or Inlet to *Persia*, now in the hands of the *Grand Signior*. 5. *Bitlis*, and *Maniscute*, belong to the *Curdes*, who have here many and divers Lords, better affected to the *Persians* than the *Turks*, and yet when the *Turks* have established Governours in these quarters, they have chosen them out of the principal of the Country, who have not ceased to take part in all occasions rather with the *Persians* than the *Turks*. *Bitlis* is between two Mountains, watered with a River, which receives many fair Fountains. The Houses are built with Stones, which is rare in that Country; others being of nothing but *Wood* and *Earth*. The Castle is seated advantageously, but I believe this place is not now in the hands of the *Turks*; and to speak truth, we have at present little knowledge of any thing concerning these quarters.

ARMENIA was much better known, and more famous in Ancient time than at present, under the name of *Turcomania*. Its Bounds are very advantageous, being quite encompassed with high Mountains, large Rivers, and washed by divers Seas, and seated Northwards of the *Caspian Mountains*, which divides it from *Media*, now called *Servan*.

This Country is well replenished with *Mountains, Vallies, Rivers*, and *Lakes*. The Mountain *Anti-Taurus* divides it East and West, almost from one

H h

Its Air, and fertility and trade.

Its chief Places.

The Bounds of Armenia.

The Mountains of Armenia.

Chief Rivers
in Armenia.

Lakes of most
note in Arme-
nia.

Kings of em-
ment note in
Armenia.

The division
of Armenia,
according to
Ptolemy.

extremity to the other; whose most Easternly point is called *Abus*, from whence the *Euphrates*, *Tigris*, and *Araxes* take some of their Streams. The *Gordian* Mountains pour forth the greatest supplies to *Tigris*; and the *Pariardes* increase most the Streams of *Euphrates*, *Araxes*, and *Farza*.

Farza turns his course towards the North, and after having passed *Colchida*, and pressed through 100 or 120 *Bridges*, falls into the *Euxine Sea*. *Araxes* turns towards the East, watering the fairest and richest Plains of *Armenia*; and falls into the *Caspian Sea* between *Media* and *Albania*. Both the one and the other *Euphrates* descend towards the West; but approaching the *Euxine Sea*, it turns again towards the South; and reunites its two Channels into one, traverses the *Anti-Taurus* and *Taurus*, divides *Armenia* and *Mesopotamia* from *Asia Minor*, *Syria*, and *Arabia*; descends into *Chaldea*, where it waters the ancient *Babylon*, and loses it self in the *Tigris*. This last descends from Mount *Abus*, and the *Georgian* Mountains, falls into divers Lakes, loses it self and rises divers times out of the Earth; cuts the Mountain *Niphates*, separates *Mesopotamia* from *Assyria*, washes *Ninive*, *Selencia*, *Ctesiphon*; receives all the branches of the *Euphrates*, and discharges it self in the *Persian* Gulph.

The greatest Lakes of *Armenia* are, *Thospitis*, *Areessa*, and *Lychintes*; this last is towards the *Araxes* and the *Caspian Sea*: *Areessa* is the same that *Pliny* and *Solinus* call *Arcthusa*. *Thospitis*, according to *Ptolemy*, is another Lake: the *Tigris* likewise crosses; after which it loses it self the second time. The first hath its Water so, as it will take spots out of Cloaths, but is not good to drink.

Among the Kings of *Armenia*, which made themselves most known to the *Romans* or *Parthians*; *Tigranes*, Son-in-law to *Mithridates* King of *Pontus*, hath been the most famous. This *Tigranes*, after having been an Hostage in the hands of the *Parthians*, regained his Estates by their means, in recompence of which he gave them 70 Valleys, on the confines of *Media* and *Assyria*; but after he knew and had gathered together his Powers, he retook all those Vallies, beat the *Parthians* out of them, pillaged *Assyria* as far as *Ninive* and *Arbela*, subjected to himself a part of *Media*; and afterwards all *Mesopotamia*, *Syria*, *Phœnicia*, and *Cilicia*. But whilst he believed himself above Fortune, *Mithridates* his Father-in-law was divers times defeated, and driven from his Realm of *Pontus* by *Lucullus* and the *Romans*, and retiring himself into *Armenia* to his Son-in-law, his refusal to abandon or deliver him into the hands of *Lucullus*, drew the *Romans* into *Armenia*, where *Lucullus* several times defeated *Tigranes*, took *Tigranocerta*, where was his Regal Diadem, and likewise in a great Set-Battel, where *Tigranes* had 150000 Foot, and 1000 or 1200 Horse, slew 100000 Foot, and the greatest part of his Cavalry, constraining him to yield to the *Romans* the Provinces of *Cilicia*, *Syria*, *Phœnicia*, and *Mesopotamia*, and content himself with *Armenia* only; but for the present let us lay aside History.

Ptolemy divided *Armenia* into four principal Parts, and allotted to the first 7 Regions or Provinces, 6 to the second, 3 to the third, and 4 to the fourth: placing in the first part 30 Cities, 27 in the second, 12 in the third, and 18 in the fourth; which are in all 4 Parts, 20 Regions or Provinces, and 87 Cities. *Pliny* accounts 120 *Strategies* in *Armenia*, which are the Governments or particular Jurisdictions of every Province; six for each, and one as much as the other. *Armenia* is not only known in prophane History, but likewise in Holy Writ. After the Deluge, the Holy Scripture makes mention, that the *Ark* of *Noah* rested upon the Mountains of *Armenia*: to say precisely at present which they were (there being so many in *Armenia*) Authors cannot agree. We only conjecture, that they must be either *Abus*, which ends the *Anti-Taurus*, or the *Pariardes*, or the *Gordons*, which are the highest in all *Armenia*; and from whence the *Euphrates*, the *Tigris*, the *Phazza* or *Phasis*, and *Araxes* descend.

Now *Euphrates* is called *Frat* or *Forat*, the *Tigris*, *Diglat* or *Digelat*; these two names, *Frat* and *Diglat*, are found among the four Rivers, which *Moses* saith came forth from the *Terrestrial Paradise*: We must therefore seek this *Paradise* not far from hence; the difficulty is to find the other two Rivers, *Phison*, and *Gihon*.

Almost

The Terrestrial
Paradise in
Armenia.

Almost all Authors conclude the *Nile* for *Gehon*, and the *Ganges* for *Phison*; but as the Bible describes these Rivers, as us, they must descend from the same place; which the *Tigris*, the *Euphrates*, the *Nile*, and the *Ganges* cannot do. The *Tigris* and the *Euphrates* have some Springs, which are not far distant the one from the other; but those of *Ganges* are more than 200 Leagues, and those of the *Nile* more than 1500 Leagues from those of the *Tigris* or *Euphrates*; and moreover those of *Nile* and of *Ganges*, are more than 2000 Leagues one from the other.

Phasis hath its heads in the same Mountain with the *Euphrates*, and may therefore better answer to *Phison* than can the *Ganges*. The *Araxes* hath its Springs in the same Mountains with the *Phasis* and *Euphrates*, and so may better answer to the *Gehon* than the *Nile*; for as for the *Gehon*, or *Jebon*, which we now know it answers to the *Oxus* of the Ancients; which runs between *Bactriana* and *Sogdiana*, and discharges itself into the *Caspian Sea*; but it hath its Springs in Mount *Caucasus* in *India*, a little on this side the Springs of the *Indus*, which are likewise 8 or 900 Leagues from those of *Tigris* and *Euphrates*.

Since then the *Tigris*, *Euphrates*, *Phazza*, and *Araxes*, have here their Springs, we may judge that the *Terrestrial Paradise* was in these Mountains. The Holy Scripture saith, that it had in the midst of it a Fountain, from whence issued a River alone, which divides itself into four others, which it names *Phison*, *Gehon*, *Diglat*, and *Frat*. It is to be believed, that this Fountain was in the midst of the World, to the end the Rivers might have a course almost equal to water all parts of the World. It must likewise be concluded, that this Fountain must be in some high part of the World, to the end that Rivers might have an equal fall. The Mountains of *Armenia* are directly in the middle of our Continent; which may easily be proved by casting the eye upon the whole Continent: they are likewise the highest in the World, since they were first discovered after the Deluge, and those on which the *Ark* of *Noah* rested; and the modern names of the Rivers not being very different from the ancients, at least the three or four; I am bold to say, that if there yet remains any marks by which we may discover the place where the *Terrestrial Paradise* hath been, it is rather in these quarters than any other.

G E O R G I A.

Above *Turcomania*, and between the *Black Sea* and the *Caspian*, as far as Mount *Caucasus*, lies *G E O R G I A*; which is divided into three or four parts, *Mingrelia*, *Avogasia*, *Gurgislon*, and *Quiria*: *Avogasia* is sometimes comprehended under the name of *Mingrelia*; and on the other side a part of the ancient *Armenia* passeth likewise under the general name of *Georgia*: *Mingrelia* and *Avogasia* together, are the same with *Colchis* of the Ancients; or little more: *Gurgislon*, to the ancient *Iberia*, and sometimes likewise to that part of *Armenia*, which falls under the general name of *Georgia*: *Quiria* answers to the ancient *Albania*.

The *Georgians* are docile, peaceable, lovers of Christianity, much addicted to drinking, and the stronger the Drink the better acceptable: At Feasts the *Women* never eat with the *Men*. They are great lovers of *Onions* and *Herbs*, are much addicted to Trade, are great Travellers, are very expert at the *Bow* and *Arrow*, and are esteemed the best Souldiers in all *Asia*.

The Cities of *Phans*, or *Phazza*, and *Savatopoli*, are the most famous of *Mingrelia*; and formerly of *Colchis*. *Savatopoli*, once *Sebastopolis*, and before that *Diofcurias* had the confluence of 300 different Nations, and different Tongues, which came hither from the North, in way of Traffick: *Phazza*, anciently *Phasis*, on the River of the same name, was the abode of *Hietes*, who kept the *Golden Fleece*, which the *Argonauts* took away, after having vanquished all those difficulties which presented themselves to their hindrance.

H h 2

I believe

Georgia, and
its parts.

its chief pla-
ces.

Of the Golden
Fleece.

I believe that this *Golden Fleece* was no other thing, than a Trade of *Wool, Skins, and Furrs*, which all the Northern People brought to *Phasis*, which *Jason* and the *Greeks*, among all the People of *Europe* were the first Discoverers of: And because there was great profit, and many hazards and dangers in the first Navigations, it was feigned that the *Fleece* was of *Gold*, and that it was guarded by furious Bulls; Men well armed; and a horrible and affrightful Dragon. It may be added, That *Jason* with the *Golden Fleece* brought *Medea* with him, which after caused so many displeasures in his Family; that is, that Riches having introduced some Luxury among the *Greeks*, their *Women* became more proud and troublesome.

Places in
Georgia.

Cori and *Bassachiuch* are the best Cities of *Gurgistan*: *Tefflis* and *Derbent* the fairest of that part of *Armenia*, which passes under the name of *Georgia*; *Bassachiuch* may answer to the ancient *Artamista*; *Cori* to *Harmastis*, or *Armatistia*; *Tefflis* to *Artaxata*; and *Derbent* to *Caspia Portæ*: *Bassachiuch* and *Cori*, with some other places of *Gurgistan*, have their Princes, of which there are many throughout *Georgia*; *Cori* is most advanced towards the Sea, and *Bassachiuch* more engaged with the Mountains. *Tefflis* and *Derbent* are in the hands of the *Turks*, as we have said in *Turcomania*.

Country of
Quiria, its Pro-
vinces, and the
chief Places.

QUIRIA extends it self from the particular *Georgia*, which lies on the West and South unto Mount *Caucasus*, which bounds it on the North side. Some Authors divide it into two, others into three Provinces; of which the chief Cities are *Siranu*, *Zitrach*, and *Chipicha*; instead of *Siranu*: others put *Zambanach*; and instead of *Zitrach*, *Gorgora*; possibly these names are not different but to divers People, though they be the same places. However it be, *Siranu*, or *Zambanach*, answer to the ancient *Albana*, Metropolis of *Albania*; *Zitrach*, or *Gorgora*, answers to the ancient *Getara*, which the Greek Text in *Ptolomy* writes *Gagara*, and both the places are on the Sea: they have been, and may possibly yet be, rich and Merchandizing. *Chipicha* is farther up in the Land, and was the ancient *Cbabala*.

C O M M A N I A.

Commania, and
its bounds.

Above *Georgia* lies *COMMANIA*, little known by the Ancients, and less at present; Mount *Caucasus* bounds it on the South, and separates it from *Georgia*; the River *Don* or *Tana* is its Northern limits, and parts it from *Muscovia*; the *Euxine* or *Black Sea*, and the Sea of *Zabaque* or *Tana*, doth wash it on the West, and divides it from the petty *Tartars*: the *Caspian Sea*, or the Sea of *Taberestan* lies to the Eastward of it, and gives it Traffick and Communication with *Persia* and *Tartaria*.

Its length and
breadth.

Its People.

This Region may have 300 Leagues of length from the Streight of *Vospero* unto the River *Volga*, which are its extream bounds from East to West, and about 100 from North to South. The People pass all under the general name of *Circasses*, which the *Polonians* call *Peint Zeorfski*, that is, the Inhabitants of the five Mountains. They are free, having some Chiefs or Governours, and living very near after the manner of *Switzers* in *Europe*, hiring themselves to War, sometimes to the *Turks*, their Neighbours, on the *Black Sea*; sometimes to the *Tartars* or *Moscovites*, which are next them on the Sea of *Zabaque* and River *Don*; and sometimes likewise to the *Soldan* of *Persia*, who is their Neighbour on the *Caspian Sea*. They have been *Christians* of the Greek Churches, but with many Superstitions; at present, for want of Teachers, many let themselves fall to *Mahometism*, others to *Idolatry*. They are warlike, nor care they for fortifying their Towns, confiding in their Arms, and in the situation of their Country. At their Funerals, the Relations and Friends of the Deceased scarifie their Flesh, prostrating themselves on the ground, and tear their Hair. If a man have no Children by his Wife, he may take others to raise up Issue; and Women are allowed their Gallants, and the more she hath, the more she is respected; which proceeds from her handfomness,

handfomness; Beauties being admired by them; and this is no disgrace to her Husband, as amongst us: and if the Man or Woman cannot agree, they are parted. The People for the generality are of an excellent Complexion, especially the Women. All the Country People are slaves to the Lord of the Village where they live, and are employed to till his ground, and other services.

But the People of these Quarters have been much more famous formerly, under the name of *Amazons*; for this was their true and natural Country, from whence they came, and made their incursions into divers parts of *Europe* and *Asia*. They had Sovereignty in *Colchida*, in *Albania*, in *Cappadocia*, in *Asia* the Lesser, in *Cilicia* in *Syria*; and did in divers places build many fair Cities, as *Themiscyra* in *Cappadocia*, and on the *Euxine Sea*; *Mirlea* in *Bithynia*, and on the *Propontick*, *Pytane*, *Myrina*, and *Cuma* on the Coast of *Æolia*; likewise *Ephesus*, *Smyrna*, and *Pyrene*: On the Coast of *Ionis*, (these two Quarters, *Æolia* and *Ionis*, being on the *Ægean Sea*.) *Mitelen* in the Isle of *Lesbos*, and *Paphos* in the Isle of *Cyprus*, who made themselves known in those Wars they sustained against *Hercules*, near *Themiscyra*; against *Theseus*, near *Athens*, whither they carried the War against the *Greeks*, before *Troy*, whither they went in favour of *Hector*, against the *Persians*, and other People, in divers occasions. Some of them made their abode at *Themiscyra*, others at *Alope*, which was afterwards called *Ephesus*; and others at *Zezeja*, not far from *Troy*.

To conclude, the Ancients have spoken so many wonders of them, that the least of them have passed for Fables. It may be believed, that some Estates in these Quarters being fallen under the Government of *Women*, their Husbands being deceased, and their Children young, or for some other reason, these *Women* administered the publick Affairs with so much conduct and generosity, both in Policy and War, that they excelled the greatest part of Men; from whence the *Greeks*, according to their ordinary custom, took occasion to speak things not only beyond the Truth, but all that came nigh to Truth. And so much for *Turky* in *Asia*.

its ancient
People the
Amazons.its ancient
People the
Amazons.

ARABIA,
which may
be consider-
ed in

LAND, with
its three
Parts, as they
lie

Between the RED-SEA, and
Gulph of BALSERA and
ORMUS; as,

HYAMAN, GEMEN, or
ARABIA the HAPPY.

Near PALESTINE, or the
HOLY LAND; as,

BARBAAB, or ARABIA
the STONY,

Near CHALDEA, and the
EUPHRATES; as,

BERIARA, or ARABIA
the DESART,

ISLES ad-
jacent, as they
lie

In the PERSIAN GULPH,
or GULPH of BALSORA,
and ORMUS; as,

In the SOUTHERN OCEAN; as,

In the RED-SEA, or Sea of
MECCA; as,

Baharem,
Oulximi.
Cotl.
Tome.
Andrani.
Quaro.
Mazira.
Curia.
Muria.
Fince.
Camaran,
Decor.
Zaiban.
Turach.
Muchi.
Monte Marzoan.
Genaman.
Chifale.
Cajas.

Medina,
Chaibar,
Algair,
Egra,
Soquia,
Mecca,
Ziden,
Nageran,
Dhafar,
Magara,
Zerzer,
Cubid,
Gilan,
Zibith,
Sanaa,
Mechlaf Acherda,
Aden,
Abin,
Odeida,
Laghi,
Almacharama,
Saada,
Fartach,
Agiaz,
Caxem,
Gubir,
Dofar,
Pefcher,
Nerbante,
Guebelhamar,
Alibiaali,
Calhar,
Cor,
Tybi,
Dayma,
Curia,
Spalheiro,
Cueva,
Cerique,
Hor,
Calajave,
Mafcatas,
Sohar,
Otfacan,
Doba,
Mocandon,
Mirabat,
Masfa,
Syr, or Sour,
Mafcalat,
Jemen,
Zirildin,
Lalach,
Elcarif,
Bahar,
Ahfo,
Manabon,
Fararan,
Jamama,
Borani,
Madian,
Medava,
Sur,
Thara,
Herat, of old Petras,
Moab,
Bullereth,
St. Catherine.
Anna,
Mexat-Ali,
Mexat Occem,
Sumifcafac,
Sukana,
Faras,
Kadhema,
Anna,
Abadon,
Tangia,
Thaalabia,
Remala,
Maaden Alnoçra,
Manama.

Mazira.

Camaran.

ARABIA.

ARABIA hath for its Eastern Limits, the *Persian Gulph* and *Chaldea*; for its Southern, the *Ocean*; for its Western, the *Red Sea* and some part of *Egypt*; and for its Northern Limits, the River *Euphrates*, together with some part of *Palestine*.

Arabia; its Bounds.

Arabia, hath been well known both to the Ancients, and at present. They commonly divided it into three parts: *Baraah*, or *Arabia* the Stony, which lies near the *Holy Land*; *Berjara*, or *Arabia* the Desert, near to *Chaldea* and the *Euphrates*; *Hyaman*, or *Gemen*, or *Arabia* the Happy, which advances it self between the *Red-Sea*, which separates it from *Africa* and the Gulph of *Ormus*, which divides it from *Persia*, into the *Indian Ocean*. And this part is the greatest, the richest, and best inhabited of all.

Its Parts.

Arabia the Stony hath for its chief places, 1. *Petra*, now called *Herat*, which signifies a Rock, whereon it was built with an advantageous situation; a place of great strength, and much noted as well in prophane History as Holy Writ. 2. *Bosra*, now called *Busefereth*, rebuilt after its former Ruins by *Augustus Caesar*; a City of great Antiquity, and memorable for being the Birth-place of *Philip*, one of *Alexanders* Successors, who was the first of the *Romans* Emperours which embraced Christianity. 3. *Medava*, now *Moab*, according to the Translation of the *Septuagint*; and being so, the name may be taken from *Moab*, Son of *Lots* eldest Daughter, from whence the *Moabites* descended, of whom mention is made in the Old Testament. 4. *Berenice*, so named from an *Aegyptian* Queen, but better known by the name of *Ezion-Geber*; here it was that the Children of *Israel* did encamp; where also those Ships employed by *Solomon* to *Ophir*, did make their ordinary Harbour. 5. *Sur*, one of the chief Cities of the *Amalekites*, giving name to a Wilderness there adjacent, remarkable for the great Victory which *Saul* gave the *Amalekites*, where also the Children of *Israel* first encamped after their passage through the *Red Sea*. 6. *Thara*, where *Korah*, *Dathan*, and *Abiram*, were punished: And, 7. *Madian*, seated towards the *Red Sea*, being the City of *Jethro*, whose Daughter *Zipporah*, *Moses* took to wife.

Arabia the Stony, and its chief places.

Besides these Cities there are some others, yet the Country is for the most part Desert, and is the same where the Children of *Israel* wandred 40 years; there, where then inhabited the *Moabites*, *Amalekites*, *Midianites*, *Idumeans*, and others; there, where are the Mountains of *Sinai* and *Horeb*. The *Israelites* being in these Deserts, lay a whole year near this Mountain, and during that time *Moses* received from God the *Decalogue*, dedicated the *Tabernacle*, ordained a *High Priest*, *Priests* and *Levites*, and established *Ecclesiastical* and *Political Laws*. There is at present a Monastery of *St. Katherine*, built by *Justinian*; and all sorts of *Pilgrims* are received by the *Caloyers*, that is, *Religious Greeks* which inhabit there. The *Burning Bush*, in which God appeared to *Moses*, was near Mount *Horeb*. The *Rock* which *Moses* struck to have Water, was of this Mount; and likewise on this Mountain it was that *Moses* besought God for the *Israelites* against the *Amalekites*: also Mount *Hor*, bordering on *Idumea*, where *Aaron* died.

Remarkable things here transacted.

On the Coast of the *Red Sea* is the Castle *Tor*, a Borough or Walled Town, and a Port very famous, where it is believed, that the *Israelites* having passed the *Red Sea*, entred the Deserts this way: And it is likewise a great Passage, where the *Caravans* stop at their return from *Mecca*.

Arabia

Arabia the
Desart describ-
ed.

ARABIA the Desart, so called by reason of the vast Sandy Desarts, and the uninhabiteness thereof, scarce affording either food for Man or Beast, so that those which travel this Country are forced to carry with them their Provision, and guide themselves to the place design'd by the help of *Stars*, as they do at Sea; and are forced to go in great Companies or *Caravans*, for fear of being robbed and rifled by the *wild Arabs* (who here inhabit in Tents, which they remove as occasion serveth from place to place, either for fresh Pasture, or otherwise,) and yet much travell'd by Merchants, who Trade into *Babylonia*, *Egypt*, and elsewhere. Some Authors have observed in the course of their Trade, that the *Sandy Desarts* are their *Seas*, the *wild Arabs* their *Pirates*, and their *Camels* their *Ships*; each *Camel* carrying 600 or 1000 pound weight.

Its People.

The People are much addicted to Theft, by which they get their chief living, being stout and warlike Men, and not Tilling the Earth, and planting *Fruits*, *Plants*, or the like; their chief food being *Venison*, *Milk*, *Fowls*, and *Herbs*. They go half naked; their Wives they hire for what time they please, who in way of a Portion bring a *Tent* and a *Spear* to their Husbands. Both Sexes are much given to Carnal lusts, and when Women are delivered of a Child, they leave it without troubling themselves with it.

Its chief Ci-
ties.

There are found in *Arabia* the Desart two Cities of the name of *Anna* or *Anna*, one on the *Euphrates*, and the other on the River *Asan*, not far from the Gulph of *Balsora*: this last is least famous; the other is the most considerable of the Province, seated both on the one and the other Bank of the *Euphrates*; but the greatest part and the richest is on the *Arabian* side. There is in all about 4000 Houses, which have been much ruined in the late Wars between the *Turks* and *Persians*. The City contains divers Isles, on one of which is a Castle. At *Suskanna*, a Borough upon the great Road between *Anna* and *Aleppo*, *Texera* saith, That the *Women* are as fair as *Angels*; if he had like wife said as wife, and had spoken truth, all *Men* from the four Corners of the World had been obliged to go to seek them. 3. *Mexat Ali*, that is, the Oratory of *Ali*, had once 6 or 7000 Houses, when the Sect of *Ali* bore sway in those quarters: there remains at present not above 500 Inhabitants. 4. *Mexat Ocem*, that is, the Oratory of *Ocem*, is not walled, nor hath above 4000 Houses. *Saba*, now *Simiscasac*, according to the opinion of *Guillandin*, is the place from whence the Three *Wise-men* departed to go to *Bethlem*, to adore the *Saviour of the World*.

This *Arabia* the Desart, according to some, hath divers *Lords*, which command it, and which for the most part are *Vassals* or *Tributaries* to the Great *Turk*; who holds likewise a part. But these People being more inclined to the *Mahometan* Sect of *Ali*, which is that of the *Persians*, than to that of *Omas*, which is that of the *Turks*, are more affectionate to the *Persians* than to the *Turks*; and some of these *Lords* likewise hold of the *Persians*.

Others give all *Arabia* the Desart to one King, and will have the City, or rather the Court of that Prince, to have a wonderful disposition and situation; and that the Prince can make it all a March or Walk when and as often as he pleases, which is still by going thither where they may best find food for their *Horses* and *Camels*; and they say, that the place being chosen, they dispose the Quarters and Streets after the ordinary manner: and at the same time pitch all the Tents; that of the Prince in the midst, and the others about always in the same fashion; that part which is towards the North, South, East, or West never changing. And the Quarters and Streets have their Names and their Tents in the same form; inasmuch that who once knows the order, may easily find any which inhabit therein.

This moving City, or rather this *Court Errant*, contains not only the *Militia* of the Prince, which are above 2000 Men, but likewise a great number of their *Nobility*, *Merchants*, *Artizans*, and divers Strangers which follow this Court.

ARABIA the Happy is a great *Peninsula*, which stretcheth it self from the Mountains which divide it from the other two parts of *Arabia* to the *Ocean*, being 3, 4, and in some places 500 Leagues long and broad. The Gulph of

Arabia the
Happy bound-
ed.

of *Balsora*, and *Ormuz*, otherwise the *Persian* Gulph, washes it on the left side; the *Red Sea*, or Sea of *Mecca*, otherwise the *Arabian* Gulph on the right; and the *Oriental* or *Indian* Ocean, which is there called the Sea of *Arabia* on the Front.

Arabia the Happy may aptly be so called by reason of the fruitfulness and richness of the Soil, which produceth plenty of *Corn*, *Wine*, *Fruits*, *Odoriferous Spices*, great increase of *Cattle*; also abounding in *Gold*, *Pearls*, *Balsom*, *Myrrhe*, *Frankinsence*, several sorts of *Drugs*, together with divers useful and beneficial Commodities. Also seated in an exceeding healthful and temperate Climate, and enriched with many pure and pleasant Streams and Fountains, whose Waters are Medicinal.

Its fertility
and commo-
dities.

These People are very faithful and punctual in their Promises, boasting of their Nobility, as being descended from *Jupiter*; hating any base or mechanical Art, but applying themselves, some to grazing of *Cattle*, and others to Merchandize. Here it is held Adultery for a Man to enjoy any Woman, save those of his own Kin, as his Sisters, Mother, Cousins, and the like; whom also they take as Wives. Here in this Country are great quantities of *Ostriches*, which for the most part abide in the Desarts.

Its People.

The Ancients mentioned a great number of different People, Cities, and Kingdoms; and we at this day find the same. The *Turks* possess one part, the *Persians* another, but much less than the *Turks*. The *Sultan*, or *Xecque* of *Mecca*, another; and divers Princes, People, and some Republicks, the rest.

Its chief Cities towards the *Red Sea* are, *Medina*, or *Medina Elnabi*, or *Talnabi*, that is, the City of the Prophet; and *Mecca*: this last the Birth place, that the Burial-place of *Mahomet*. *Medina*, though situated in a barren and desolate place, adjoining on *Arabia* the Stony; yet by reason of its being the Sepulchre of that vile Impostor *Mahomet*, is become a fair City (though not containing above 6000 Houses) being a place of great Trade and resort, by reason of the Pilgrims which hither flock to pay their blind Devotion. This Sepulchre or Tomb, wherein their Prophet lieth, is enclosed within an *Iron-Grate*, and covered with *Green Velvet*, having the supply of a new one every year from the *Grand Signior*, and the old one being the Fees of the Priests, they cut into little shreds and pieces, which they sell for great Relicks to the Pilgrims, which brings a great Revenue to them. In this Temple there are about 3000 Lamps of *Gold* and *Silver*, wherein is *Balsom*, and other such rich Odours, Oynments, and Oils, which are continually kept burning. Thus much for his Tomb: now a word or two concerning his *Life*.

Its chief
Places.

Mahomet's
Tomb.

He was (as I said before) born at *Mecca*, distant from *Medina* about 60 Leagues, seated also in a barren Soil; but of great resort and Traffick, abounding in the Commodities of *Persia* and *India*, which from hence are transported on *Camels* to *Egypt*, *Palestine*, *Syria*, and other parts of the *Turks* Dominions. The City is very fair, filled with about 6 or 7000 well built Houses, having a very sumptuous Temple; the place not walled, except by Mountains, between which there are four passages, which give entrance and issues to the City. Here it is made death for any *Christian* to approach within five miles. But to proceed: The Father of this Impostor was an Idolatrous *Pagan*, and his Mother as perverse a *Jewess*; at the age of two years he was left to the tuition of his Uncle, who after he had kept him to the age of 16 years, to quit himself of further charge and trouble, sold him to the *Ismaelites*, who in their Markets sold him again to a rich Merchant; who at first was employed about servil work, till at last the Merchant perceiving him to be of so ripe a wit and solid judgment, advanced him from his Kitchen to be his Factor, sending him with his *Camels* laden with Merchandize, into *Egypt*, *Persia*, *Syria*, and other places; in which he was so fortunate, that he gained his Master a great Estate, together with no small fame and credit to himself. He was of personage low, but comely, with which his Mistress was so much taken, that upon the death of her Husband, his Master, she soon married him, and endowed him with her wealth. He was much troubled with the *Falling-sickness*, which he said were *Heavenly raptures*, in which he had conversion

A story of the
life and death
of the Im-
postor *Mahomet*.

with the Angel *Gabriel*; he was well skill'd in *Magick*, by which he taught a *white Pigeon* which he kept to feed at his Ear, where he put *Barly-corns*; and this *Pigeon* he reported was the *Holy Ghost*, which instructed him in the Law he afterwards published, which was a new Religion, whereby he might bring the *Jews*, *Gentiles*, and *Christians* into one form of Religion; where, in a Cave not far from *Mecca*, with the help of *Sergius* a *Nestorian Monk*, and the aid of a certain *Jew*, he made the *Alcoran*; a Book so highly adored by them, that on the Cover is written, *Let none that are unclean touch this Book*. 3. *Ziden*, seated on the *Red Sea*, and in the midst of all the Coast of *Arabia*, serves for a Port to *Mecca*, from which it is distant 40 miles; well built, rich, and of great resort, which hath been walled and fortified since the *Portugals* have made themselves known, and are become powerful in the East. 4. *Egra*, by the *Arabians* called *Algier*; seated on the *Red Sea*, serving for a Port-Town to *Medina*, from which it is distant about three days Journey.

Mecca, *Medina*, and a good part of *Arabia* doth belong to *Xeriff*, descended from *Hassem*, great Grandfather to *Mahomet*, and for this reason both the *Turks* and *Persians* do much respect him; suffering him freely to enjoy his Estates without his paying Tribute to either: for on the contrary, the *Turk* causeth to be given him a third part of the Revenues of *Egypt*, that the Pilgrims which go to *Mecca* may be protected against the *Arahs Beduins*, who by their incursions much trouble those quarters; and not only Pilgrims, but likewise Emperours, Kings, and *Mahometan Monarchs*, often make him great Presents. 5. *Zibit*, near the Mouth of the *Red Sea*, is fair, rich, well built, and of a good Trade in *Drugs*, *Spices*, *Perfumes*, &c. It was once the Seat of a Kingdom till the *Turk* seized it, when he did *Aden*, causing the King of this place to be hanged at the Yards-arm of his Ship, and the others head to be stricken off. Seated nigh the *Red Sea* in a large Plain, being the residence of the *Turkish Beglerbeg*. 6. *Aden* is the strongest, fairest, and most pleasant City of all *Arabia*, enclosed with Walls towards the Sea, and Mountains towards the Land. On the top of these Mountains are many Castles of a curious prospect; it hath about 6000 well built Houses, and inhabited by a miscellany of People, as *Arabians*, *Turks*, *Indians*, *Persians*, and *Ethiopians*, which here reside for the benefit of that great Trade, which is here driven from several parts of the World. It is situate without the *Red Sea*, at the beginning of the great Ocean, and by the industry of the Inhabitants is made an Island, fortified with a strong Castle, which commands the Road. This City or Island is now become the Magazine for the Commodities of *India*, *Persia*, and *Arabia*.

Above *Aden*, and farther in the main Land, are many fair Cities, as *Laghi*, *Agiatz*, *Almachazane*, *Sanaa*, and others, subject to the *Xecquo* of *Mecca*. *Laghi* is not far from the Sea; *Agiatz*, or *Hugias*, sometime gave its name to these quarters. *Almachazane* is seated on the top of a very high Mountain, and of a difficult access; it hath a Cistern capable to hold Water to furnish 100000 Men: The *Xecquo* oft times keeps Court here. *Sana*, or *Sanaa*, stands at the foot of a Mountain, and is one of the greatest, fairest, and strongest of *Arabia*, having many *Vineyards*, *Meadows*, and *Gardens* within its Circuit. Its Houses are well built, its *Vineyards* and *Gardens* well cultivated, its Walls 10 Cubits high, and its Ramparts 20 Cubits thick. Its Territory is watered with many Fountains, produceth excellent Fruits, and feeds the best Horses of *Arabia*.

Towards the East, and almost 150 Leagues from *Aden*, is *Fartach*, a Kingdom and City near the Sea, and having a Cape of the same name. The *Tarquins* are valiant, and their King defends himself courageously against the *Turks*, having seen their treatment to his Neighbours of *Aden* and *Zibit*. The Ports of *Dofsar*, (which is the *Turks*) and *Pescher*, are the most renowned of this Coast, and send forth the best *Frankinsence* of *Arabia* in great quantity. Higher on the Coast, and farther on the Land, are the Cities and Kingdoms, or as they call them, the *Sultanies* of *Gubel haman*, *Alibmabi*, *Amazirifden*, and others.

The

Aden, and its great Trade.

Other Cities in Arabia.

Kingdom and City of Fartach, its People and Trade.

The rest of the Coast unto *Cape de Raz-al-gate* is very barren; from *Cape de Raz-al-gate* unto that of *Almocundon*, the Soil is the best of all *Arabia*; and some would here alone confute the name of *Thymian*, which signifies *Barren*. There are here many fair Cities, both on the Sea-coast and higher in the Land, one of chief Traffick between the East and *Arabia* the *Happy*, was formerly called *Jobar*; but the Trade was after transported to *Ormuz*, on the *Persian* Side. In our time it was restored to the *Arabian* Side, to wit, at *Maj-gatta*, held by the *Portugals*. *Solur* and *Mastaver* are between the *Capes* of *Raz-al-gate*, and *Moccondon*, and are not above 20 Leagues distant from each other. Within the Land are *Masfara* a City and Kingdom; *Mirabat*, *Jobar*, or *Job*, and others, of little note and desire.

Beyond the *Cape Moccondon*, and advancing towards the Mouths of the *Tigris* and *Euphrates*, among many other places we have *Bicarr*, or *El-Calf*, a famous Port, and which communicates its name to the adjacent Gulph, which the ancients called *Sinus Persicus*, and we at present the Gulph of *Babylon* and *Ormuz*, both of which names it hath formerly had. Beyond the *Cape*, is *Babbar*, whose Territory is called *Babbarim*, or *Babbarim*; and the *Isle* and City before *Babbarim*, farther in the Land, is *Masfalar*, a City and Kingdom; *Ameng*, likewise a Kingdom and City; according to some, *Laghi*, or *Laghi*, likewise a Kingdom and City; where are of the best Houses of *Arabia*, as at *Sanaa*, *Dofsar*, *El-Calf*, and some other are the *Turks*; *El-Calf* is the ancient *Gerran*, and that part of the Gulph nearest the City called *Gerran* was *Sinus*, and the *Isle* of *Babbar* is the ancient *Tylos*.

There yet remains some Cities, of which some have their Kings or *Sultans*, others live in Republick, which is very rare in *Asia*. Towards the middle of *Arabia* are the *Arabs Bengeres*, a free People, and which live only of the Prey and Tribute they force from their Neighbours; yet possess they 200 or 250 Leagues of Country, and are for the most part in the Mountains. The *Beduins* towards *Mecca* are of the same nature.

Around about *Arabia* are a great number of *Isles*, which belong unto it, which are dispersed either in the Southern Ocean, *Red Sea*, or the *Persian Gulph*.

In the Southern Ocean are found three *Isles*, which bear the name of *COCCONATI*, seven by the name of *SENOBITI*, and two by the name of *Insule AGATHOCLIS*; and lastly, *CURIA* and *MURIA*, where there is found *white Turtles*, whose Shells are great curiosities.

In the *Red Sea* these *Islands*: 1. *CYNARAN*, very high, but fruitful. 2. *DALAUQA*, being the largest of all, in length 125 miles, and not above 12 broad, having a City of the same name, where they gather *Pearls*; And, 3. and lastly, the *Sumaritan Islands*.

In the *Persian Gulph* these *Islands* are found: *BAHAREM*, the most famous, because it hath the *Pearl-fishing*, the best in the Oriental parts. This *Isle* is between *Balsora* and *Ormuz*, about a 100 or 120 Leagues from *Balsora*, and 150 from *Ormuz*: It is near the Coast of *Arabia*, and directly opposite to the Coast of *Elcatif*, which is the *Turks*; but the *Isle* of *Baharem*, which is still the *Persians*, once belonged to the Kingdom of *Ormuz*. The Waters here are almost all salt; but near *Manama*, the Capital City of the Island, there are Springs of Fresh-water at the bottom of the Sea, which the *Divers* go and fetch, gathering it into *Borracho's* or *Goats-skins*, with much cunning, and bringing it forth of the Sea, do afterwards sell it. The *Pearls* of this *Isle* are very much esteemed, both for their largeness and roundness; and this fishing is yearly worth 500000 *Ducats*, besides the value of 100000 and more, which is diverted. Those of the *Isle* of *GIONFA* are of no great value; those of the other neighbouring *Isles* are less; except it be at *MASCATES*, 60 Leagues from *Ormuz*. They fish here all *June*, *July*, and *August*; if they begin sooner the *Pearls* are unripe, and not hard enough.

The Air of all *Arabia* is very healthful, but hot; nor Rains it in some places above twice or thrice in 3 or 4 years: but the abundance of the Dew makes their Fruits excellent.

I i 2

The

Other Cities and Kingdoms.

The Arabs Bengeres, a free People.

Arabian Isles in the Southern Ocean.

In the Red Sea.

In the Persian Gulph.

The People of
Arabia; their
Manners, &c.

The People for the most part are of a mean stature, lean, swarthy complexioned, effeminate voices, very swift of foot, and expert in the Bow and Dart. They first exercise themselves in Manufactures, using all sort of Trade and Traffick far off; and some add themselves to Learning, particularly to *Philosophy*, *Physick*, the *Mathematicks*, and to *Astrology*; there have been amongst them many *Grammarians*, *Rhetoricians*, *Historians*, and *Interpreters* of the *Alcoran*, which is in their Tongue, and which hath made the *Arabic* Language spread itself through all the East, at least in the most Southerly parts of *Asia*, and part of *Africa*, but little in *Europe*.

Those which range the Country are great Wanderers, and greater Thieves; they are divided into many Families, which know each other, and how to distinguish the one from the other. Every Family, how numerous soever it be, hath a principal *Xecque*, that is, a Chief, which conducts and commands them, they living almost in the same manner as the 12 Tribes of *Israel* did in the *Desarts*. They preserve a good Intelligence amongst themselves, their chief design being only upon Strangers. They assault likewise the *Caravans*, if they think themselves able enough to master them, or snatch any thing from them.

Their *Horses* commonly are little, lean, and sparing Feeders; yet courageous, swift, and of great labour. They are so skilful in managing them, that they command them as they please; and themselves are so active, that at full speed they will shoot an Arrow within the breadth of a Shilling, take from the ground those Arrows they have shot, and avoid an Arrow flying directly towards them; nor do they manage less skilfully the Sling, either in charging, retiring, or flying.

The first rise
of Mahometism.

Mahomet came not into the World till about the year 570 after *Christ*, and began not to publish and shew abroad his Doctrine till a little after the year 600; a Doctrine intermixed with *Christianity*, *Judaism*, and *Paganism*, that he might draw both the one and the other; and which established its principal end in Delights, carnal and sensual Pleasures, whereto the Oriental People were very much inclined; and withal he found the means to make use of Arms for the establishment of this Doctrine; his *Califs* or Successors in a short time carried their Government and Religion into the best parts of *Asia* and *Africa*, and into some places of *Europe*.

His People are almost all *Mahometans*. There are some *Greek Christians* towards the Mounts of *Sinai* and *Horeb*; likewise towards the *Red Sea*, and in the *Desarts* of *Arabia* the Stony, and *Arabia* the *Desart*. *Arabia* the *Happy* is unhappy in having the fewest; yet the *Portugals* hold *Mascates*, *Calafates*, and some places about it, which are *Catholics*.

P E R

Towards the CASPIAN Sea, or Sea of BACCU and SALA, which makes the Northern part of PERSIA; and are those

PERSIA, or the Empire of the SOPHY of PERSIA, with its several Provinces, as they lie

In the MIDDLE; to wit, those of

Towards the South, and washed by the ARABIAN, or INDIAN Ocean; and by the Gulph of BALSORA and ORMUS; and are those of

Together with several ISLES, as they lie in the Gulph of BALSORA, and nigh unto PERSIA; the chief among which are,

Tauri,
Sampachi,
Serice,
Ardevi,
Serg,
Bacca,
Bakoma,
Balt,
Gaxhar,
Mazandarani,
Layon,
Mofun,
Gilan,
Cachbi,
Gadiour,
Allamood,
Dilemon,
Thalckan,
Arack,
Zarab,
Moghan,
Gorbin,
Obdian,
Dargan,
Semnan,
Bafar,
Zabavay,
Tholis,
Machin,
Fenway,
Nahlan,
Merend,
Choy,
Churdistan,
Salmas,
Durmaya,
Cormala,
Hispahan,
Carbin,
Sultan,
Dankane,
Hamadan,
Hoy,
Sauva,
Koni, or Com,
Kargh,
Cafian,
Yidi,
Thabi Gilack,
Kaysi,
Thon,
Zuzan,
Moxte,
Nichabour,
Zardah,
Firabad,
Maruwe,
Bonregian,
Balch,
Hera,
Zarag,
Boft,
Necbefar,
Gifna-Caffaby,
Thaalan,
Candahar,
Greca,
Balch,
Souffer,
Askar Moukerag,
Aragan,
Hawera,
Ramhormoz,
Siapour,
Saurac,
Chirac,
Lackar,
Lar,
Darabegred,
Stahabonon,
Gombroun,
Cherman,
Girof,
Zirgian,
Mochellon,
Guadel,
Nahyan,
Paranis,
Siffan,
Mackeran,
Bafir,
Ormuz,
Quelxome,
Pulor,
Coyar,
Ficor,
Lar,
Muluga,
Garge.

P E R

P E R S I A.

The extent,
bounds, situa-
tion, &c. of
Persia.

The Persian
Empire for-
merly much
larger than
now it is.

The several
Parts, or Re-
gions of Persia.

The Province
of Servan.

Its Commo-
dities.

The Kingdom or Empire of the *Sophy* of the *PERSIANS* is one of the most famous and greatest of all *Asia*; it extends itself from the *Tigris* and *Euphrates* on the West, almost to the River *Indus* on the East; and from the Gulph of *Persia* and the *Arabian* and *Indian Sea*, which bounds it on the South, unto the River *Gehon*, and to the *Caspian Sea*, now the Sea of *Baccu*, or *Tabarestan*, which are its Northern limits; so containing about 600 Leagues of length, and 500 of breadth, being seated under the third, fourth, fifth, and sixth Climate. Nevertheless this is but a part of the ancient Empire of the *Persians*; for the *Assyrians* having ordinarily held in *Asia* all that which both *Turk* and *Persian* at present possess; and that Monarchy having begun under *Ninus*, and lasted under thirty and odd Kings 13 or 1400 years, ending in *Sardanapalus*, divided itself into that of the *Medes* and *Babylonians*, who continued it little less than 300 years, afterwards the *Persians* made themselves Masters of it: and these during 200 and odd years, which they Reigned, remitted to it the best part of what the *Medes* and *Babylonians* had possessed. But when they would have passed into *Europe*, and have seized on *Greece*, the *Macedonians* and *Greeks* leagued themselves together, and naming *Alexander* King of *Macedon* their Chief, descended into *Asia*, several times defeated *Darius*, ruined the Empire of the *Persians*, and gave a beginning to that of the *Macedonians*.

Alexander the Great held this Empire but few years, and dying, it was divided among many of his Captains; who took in the end the title of Kings, and waged War against each other, till the *Romans* seized the Western, and the *Parthians* the Oriental part of that Monarchy; these *Parthians* freed themselves from the Rule of the *Macedonians* 250 years before the Birth of *Jesus Christ*, and Reigned near 500 years. *Artaxerxes* restored the *Persians* 120 years after *Christ's* Nativity. The *Caliphs* of *Bagdat* became Masters about the year 650. The *Tartars* in 1257, or 58. The *Turcomans* in 1478. *Xa*, or *Xerque Ismael-Sophy* re-established the *Persians*, a little after the year 1500; and though they possess only the Oriental part of the ancient Empire of the *Persians*, yet it is still very great and powerful.

And we find at present under it, all that the Ancients knew under the names of *Media*, *Hircania*, *Margiana*, *Assyria* in part, *Parthia*, *Aria*, *Paraponisa*, *Chaldea*, or *Babylonia* in part, *Susiana*, *Persia*, *Caramania*, *Drangiana*, *Arachosia*, and *Gedrosia*; all these Regions taken apart being great, fair, rich, and populous.

The Province of *SERVAN* hath for its principal City, 1. *Tauris*, being the Summer-Seats of the *Persian Sophies*, containing in Circuit about 16 Miles, and including above 150000 Inhabitants, before its being so often taken, and retaken by the *Turks* and *Persians*. It is strongly fortified, seated about six days Journey from the *Caspian Sea*, in a cool and wholsom Country, and encompassed with several great Towns of note, famous for their Manufactories. The People in this part being more addicted thereunto, than unto the Sword. The Commodities that are here found, are *Silk*, raw, and in several Manufactures; *Cottons*, *Wool*, *Galls*, *Alum*, some *Spices* and *Drugs*, with several other Commodities. 2. *Sammachi*; And, 3. *Servan*, once both the Metropolis of



A MAPP OF THE EMPIRE OF THE SOPHIE OF PERSIA, WITH ITS SEUERALL PROVINCES, Designed by Monf. Santon Geographer to y French King.

Metropolis of this Province, abounding in *Silk* and excellent *Carpets*, to which the People are wholly addicted. 4. *Ardevil*, was the Signory and Birth-place of *Xeqe Aidaz*, Father *Ismael Sophy*, who restored this Empire to the *Persians* about the year 1500. Here are many Tombs of the last Kings of *Persia*. 5. *Bocca*, a place of so great trade, that the *Caspian Sea* oft takes its name: Near the City there is a Spring of *Black Oil*, which serves to burn throughout all *Persia*.

The Province of *GILAN*, or *GUEYLAN*, contains five Governments, of which the chief Cities are *Rasht*, *Gaxhar*, *Layen*, *Gilan*, *Mosun*, and *Gadiour*, besides about 30 fair and rich Cities; *Mazandaran*, which some separate from, others joyn to *Gilan*, hath in its Government 25 Cities, and in the City of *Mazandaran* about 50000 Souls. All these quarters would have revolted in 1594, but *X: Abbas* soon brought them to their duty, and chastised them for their offence.

The Province of *DILEMON* hath its Metropolis of the same name; then *Allamoed*, *Gowar*, and *Thalekan*. In the description that those of the Country give us of these places, *Allamoed* seems to answer to *Dilemon*.

The Province or *TABARESTAN* extends more than 60 Leagues on the Coast of the *Caspian Sea*, which is often called *TABARESTAN* from the name of this Province. It stretches 100 Leagues up the Land, containing in its Territory 12 fair Cities; of which *Asterabad*, or *Starabat*, which hath something of common with the name of the Province, is the principal; then *Maglasen*, *Zariach*, and others: this Country affords quantity of *Silk*.

The Province of *GORGIAN* touches not the Sea, the chief City is of the same name; then *Obscoen*, *Damegan*, and *Semnan*. *Gorgian* answers to the ancient *Hircania* Metropolis.

The Province of *RHOEMUS* is in the East of *TABARESTAN* and *GORGIAN*: Its chief Cities are, 1. *Bestan*; then 2. *Bayadi*; 3. *Zab*, *Kower*; and 4. *Thous*, higher in the Land; 5. *Keraway*; 6. *Mafyon*, and others toward the Sea and Mouth of the River *Gebon*. *Nassir Eddin*, that excellent *Mathematician*, was a Native of *Thous*, who drove *Mustalzin* from his Caliphate or dignity of *Babylon*, because *Mustalzin* had demanded of him, *Where were his Horns*. So dangerous it is to mock a man of Spirit and Courage. The City of *Thous* is esteemed very considerable, being large, and encompassed with a noble Wall, adorned with stately Structures, and among others with about 200 or 300 Towers, distant from one another a Musquet-shot. It is famous for the stately Sepulchre of *Iman Risa* of the Family of *Ali*, one of the Twelve *Persian* Saints, where great Devotions and Ceremonies are performed by them, which brings in a great Revenue to this City.

The Province of *CHURDISTAN* is divided into three Parts or Provinces, of which *Salmas* is the chief City of the first, *Maraga* of the second, and *Cormaba* of the third. Besides which there are a great number of fair Cities, as 1. *Nakxjovan*, 2. *Choy*, 3. *Guienche*, &c. *Salmas* is near the Salt-lake of *Kannudhan*, which yields Fish only at a certain time of the year. This City hath under its Jurisdiction 20 other strong and fair ones; yet is not without those wandering People which live under their Tents. *Maraga* is 4 or 5 days Journey from *Tauris*, 5 or 6 from *Salmas*. Near *Maraga* the *Persians* were defeated by the *Sarazens*, about the year 650, and their Monarchy fell into the hands of the *Califfs*. *Cormaba* is on the East of *Tigris*, and not far from *Bagdad* and *Mosul*. Its Inhabitants are esteemed the true *Curdes*, as good at incursions as the *Arabs*, who lose nothing they can catch. Near *Choy* are the *Calderonian* Champains (of *Ghelder*,) renowned for the Battle between *Selim*, Emperour of the *Turks*, and *Ismael Sophy* of the *Persians*; where this last, who had till then almost always been Victor, was defeated and lost a great Battel; and after it *Tauris*, where was his wife *Tallucanum* and his Treasures: but whilst he prepared new Forces, the *Turks* retired to *Amasia*. At *Guienche*, formerly a City and a Kingdom, contains likewise 7 or 8 fair Cities, the *Can Caidogli* caused to be builded one of the fairest and strongest Towers that is in *Persia*; besides the Stone, making use of the Heads

Province of
Gilan, and its
chief places;
&c.

Province of
Dilemon.

Province of
Tabaristan.

Province of
Gorgian.

Province of
Rhoemus.

Province of
Churdistan.

of

Province of
ATRACK, its
Commodities,
&c.

of 540000 *Turks*, which he had defeated in those quarters, and which he caused to be bruised among the Morter.

The Province of *ATRACK* is the fairest and richest of *Persia*. The *Sophies* have for sometime past made here their residence; formerly at, 1. *Casbin*, at present at 2. *Hispahan*, which are two great Cities; 3. *Casbin*, 4. *Hamadan*, 5. *Dankana*, 6. *Sawwa*, 7. *Com*, 8. *Tesd*, 9. *Soltania*, 10. *Hrey*, 11. *Gochera*, 12. *Kargh*, with several others, are likewise very fair. Near *Hrey* is gathered excellent *Manna*. *Soltan* hath great quantity of the fairest Fountains, and takes its name from the *Soltans*, which sometimes resided here. *Tesd* yields the richest and fairest *Tapestries* in the World. Near this City, and on the Mountain *Albors*, there are yet some worshippers of *Fire*, which have used it above 3000 years. *Hamadan* hath born the title of a Kingdom, and had 15 Cities under it. *Casbin* produceth many *Silk* and *Cotton* Manufactures, and hath drawn to it all the Traffick that was at *Com*, not suffering any Vagabonds or Beggars. *Com* hath been as great as *Constantinople*; but *Tamerlain* having ruin'd it, it could never regain its splendor. The Inhabitants add themselves to labour in their Vineyards and Gardens. Its Bridge is of Stone, and the fairest in all *Persia*. *Casbin* was the residence of *Xa-Thamas*, when the *Turks* had taken *Tauris*: Some esteem it the ancient *Asfacia*, others *Ecbatana*. It is not well built, but great, and filled with no less than 100000 Souls; its fair *Palace*, its many *Bazars*, and its *Atmaiden*, are remarkable. *Bazars* are places or great Streets, where there are but one fort of Merchants; the *Atmaiden*, or greater Market, which is about a mile in Circuit.

Hispahan the
chief City of
Persia.

Hispahan, the Metropolitan City of the *Persian* Monarchy, seated in the *Parthian* Territory, which in its situation is pleasant and delightful; in its Soil, fruitful, and well watered by the River *Sindery*; in its Air, serene and healthful; and for bigness, is now become the greatest City in all *Persia*, whose Walls are in circumference a reasonable days Journey. Its buildings, which are many, (scarce containing less than 75000 Houses) are proud and elegant, and was said to be once so populous, that it gave entertainment to 500000 Inhabitants. But after a certain Revolt, (for which they were severely chastised by the command of the Prince) it hath not had so great a quantity of People; yet it is exceeding populous, and much frequented by Strangers; rich in Trade, eminent for all sorts of Exercise, and more magnificent as being the residence of the *Sophy* of the *Persians*, who had here built divers Palaces, which are inhabited by his Nobles; so rich and stately, with Gardens so delightful and magnificent, that not the industry of man, nay, scarce his thought can comprehend or imagine any thing more beautiful. This City, besides its Walls, is fenced about with a Ditch, and defended by a strong Castle. The chief buildings are the *Palaces*, the *Mosques*, the *Hummums* or *Hot-bouses*, and the *Mydan* or *Market-place*, which without dispute is the fairest, richest, and noblest Building in the World, being about 1000 Paces in length, and 200 in breadth: The inside resembles our *Exchange*, being filled with Shops, where all sorts of rich Commodities are vended, and sustained by Arches; and below, furnished with such things, both for Food and Rayment, as the Country affordeth. On the West-side are seated two stately *Palaces* or *Seraglios*, for the King and his Ladies, far exceeding in state and magnificence all other the proud Buildings in this City; the Walls being of *Red Marble*, and pargetted with divers colours; and the whole Palace paved with fretted and Checkered work, over which it is spread with stately *Carpets*; the Windows are made of *Alabaster*, and white and spotted *Marble*; and the Posts and Wickets of massy *Ivory*, checkered with glittering *Ebony*, so curiously wrought in winding knots, that it may sooner stay than satisfy the eyes of the Beholder. To which stately Structure there is joyned a no less pleasant and delightful Garden, wherein are no less than 2000 several Fountains, Brooks, and Rivolets, furnished with store and variety of curious Fruits, together with what else may make a place delightful. The great place of the City is before the Palace, where the *Sophy* ordinarily resides. The Fruits in and about this City are the best in the World; their Vines yield in nothing to those of the *Canaries*: Their

Its Palaces and
Seraglio's, ex-
ceeding stately
and delightful.

Their *Horses* and *Mules* are fair and good; their *Camels* so strong, that they carry almost twice as much as those of other places. They have permitted in this City some *Monasteries* of *Christians*, as of *Carmelites*, *Augustine Fryars*, *Capuchins*, and others.

The Inhabitants do all their affairs on Horse-back; as well publick as private, in the buying and vending of their Commodities. But the *Slaves* never ride, which makes the difference betwixt them. This City being the residence of the *Sophy*, and being inhabited by so many eminent persons, which always attend this Monarch, makes it to have a great Trade, and be much frequented by Merchants almost from all places; as *English*, *Dutch*, *Portuguese*, *Arabians*, *Indians*, *Turks*, *Jews*, *Armenians*, &c. whereby it is furnished, not only with all the Native Commodities of *Persia*, as *Gold* and *Silver*, *Rago Silk*, in such great quantity, that they furnish most part of the East; as also other places, some *Drugs* and *Spices*, *Wine*, *Fruits*, &c. Also sundry curious Manufactures, as *Carpets*, *Arras-work*, *Hangings*, &c. *Cloth* of *Gold* and *Silver*, *Fine Cotton Cloths*, with several other Commodities which are here made; but also with those of *Arabia*, *India*, *China*, and *Turky*, which hither are brought in exchange for theirs, by *Caravans* or *Camels*, *Dromedaries*, and *Mules*, by reason they want the benefit of the *Sea*. They had formerly the benefit of several good Ports, as, *Tauris* and *Balsora*, but now in the custody of the *Grand Seigneur*, together with some others: The Ports that they now enjoy, and make use of, are *Ormus* and *Jasques*. In this City is erected a *Column* or *Pillar*, composed of the Heads or Skulls of *Men* and *Beasts*, being about twenty fops in circumference at the *Base*, and exalting it self near sixty foot in height. Now the reason of erecting this terrible and horrid *Column* and *Monument*, was this: The People surfeiting with *Luxury*, through their *Pride* and *Impudence*, denied their duty to their Sovereign, not only in refusing to contribute a small sum of money (being towards the extirpation of the *Turks* and *Tartars*, who did much annoy the Kingdom) but also audaciously opposed his entrance, whereupon he vowed revenge: And having made a forcible entrance, in his rage, fired a great part of the City, pillaged each House, and in two days, he put to the Sword near 30000; and to terrifie others, erected a *Column* or *Pillar* of their Heads.

The Province of *CHORAZAN*, is the greatest of all *Persia*, some divide it into *Cobazan*, *Ghorazan*, and *Chowarazan*, which others esteem as the same. It hath every where a great number of brave Cities, as, *Kaben*, *Kayen*, which yields great store of *Saffron*. 2. *Chor* abounds in *Silk* and *Manufatures*. 3. *Melched* or *Mexat*, is the chief of *Chorazan*, and shewes the Tombs of many *Persian* Kings: It is about twelve miles in compass, and hath about 100000 Inhabitants. Its Territory is fertile, its Inhabitants well made, strong, and warlike. 4. *Herat* is likewise called *Salgutzan*, and is the City of *Roses*; it producing greater quantities than any City in the World besides. It yields likewise *Rhubarb* and *Vines*, which last a long time, and so much *Silk*, that there are sometimes 2 or 4000 *Camels* laden in one day. 5. *Nirchabour* so near to *Rhoemus*, that some conceive it belonging to it; others make it a particular Province: The City hath been much better peopled than now it is. *Tamerlane* here, and hereabouts, put to death in one day about 400000 persons. 6. *Bouragian* is near a great Lake of the same name. This Lake receives many Rivers; but like the *Caspian Sea*, sends not one to the *Ocean*. But let us return to the more Southerly parts of *Persia*; we will say nothing here of *Ierack*, since the *Turks* at present hold it, with several others, not to dwell.

The Province of *CHUSISTAN* answers to the Ancient *Sughiana*. Its Soil is so fruitful, that it often yields 200 or 300 for one. Its Cities are *Southern Ardagan*, *Flawec*, *Asher*, *Maqueran*, and others. 1. *Soulier* is the Ancient *Susa*. Here the Prophet *Daniel* had the *Vision* concerning the determination of the *Persian* Monarchy, and the beginning of the *Grecian*; and where *Shamsuerus* kept his great Feast, which continued 183 days, for his Princess and Lords, imitated to this day by the *Sultans* of *Persia*, who do annually entertain their Nobles, where *Abasuerus* kept his Court, when *Ezra* demanded grace,

The Inhabitants of this City negotiate their affairs on Horse-back. *Hispahan* and its Commodities.

To observe the
chief City of
Persia.

Province of
Chorazan, its
chief Cities &
Commodities,
&c.

Province of
Chusistan, its
chief places,
&c.

The Persians
observe great
Fasts.

grace, in favour of the *Jews*; and here where *Mordecai* was exalted to the place and charge of *Haman*, who was hanged on the same Gibbet which he prepared for *Mordecai*: It is held; that the ancient Palace was built by *Memnon* (Son of *Tithonus*; who in the *Trojan Wars* was slain by the *Thessalians*;) of the spoils of the Great *Thebes* in *Egypt*; and that with such expence and magnificence, that the stones were bound together with *Gold*; but whether this be true or false, without doubt, it was very rich; for it is said, that *Alexander* found here 50000 Talents of uncoyned *Gold*, besides *Silver* Wedges and Jewels of an inestimable value. This City is of about 25000 paces in circumference, and is the residence of the *Sophy* in the Winter season. 2. *Ardgan* a fair City, on the borders of this Province, and not far from *Hispahan*. 3. *Hawez* called by the *Arabians* of *Nubia*, *Abuaz*, and made chief of the Cities of *Chusistan*, which he calls *Churdisthan*. He places next to it *Askar-Mocran*, alias *Askar-Moukeran*, on the River *Mesercan*, where there was a Bridge supported by twenty Boats. 4. *Toslar* with a River of the same name. And 5. *Saurac* with some other.

The heats in these parts, in the Summer season, are so great, especially towards the South part of the Mountain; that the Inhabitants are forced to forsake the Cities, and retire themselves into the Mountains for coolness.

Province of
Fars, its chief
places, fertility
&c.

The Province of *FARS* or *FARCI*, formerly *Persia*, now a particular Province, hath a great number of large, rich, and beautiful Cities. As 1. *Chirdef*, which is said to be about 20000 paces in circumference; where sometimes the *Sophy* hath made his residence, situate in a large and pleasant Plain, well built, and beautified with fair Gardens, and magnificent Mosques. Two of which are larger than the rest, and beautified with two Spires or Steeples, covered with a painting of *Gold* and *Azure*: These Mosques, by reason of 1000 Lamps which are kept burning, are as light by night, as by day. This City for its good Wine, pleasant Fruits, gallant People, and above all, for its pretty Women, may compare with the best in all *Persia*. The Ladies here are so fair and pleasant, that *Mahomet* passing through these quarters, would not enter this City for fear lest he should lose himself in its delights. The Soyl is very good, and *Mastick* is gathered in its Forests. The Arms they make here, are excellent. 2. *Astachar* was one of the greatest of these quarters, as likewise in the time of the *Arabians* of *Nubia*. The ruins of its Castle *Chilminare*, shew the remains of the ancient Palace that *Alexander* the Great burned, at the solicitation of the Curtisan *Thais*. At the taking of which City, *Alexander* for his share found 120000 Talents of ready money, besides the Plate, Images of *Gold* and *Silver*, and Jewels of a vast value: But its beauty did surpass it riches, having its Royal Palace built on a Hill, environed with a treble Wall; the first in height sixteen cubits; the second 30; and the third 60: All of them of Black polished *Marble*, with stately Battlements, on which were 100 Turrets. Nor was the outside more stately than the inside, which was built with *Cypress* Wood, and beautified with *Gold*, *Silver*, *Ivory*, *Amber*, and such like. 3. *Lar* or *Laar*, hath been the chief of a Kingdom, and giveth name to the *Larins*, Pieces of very good *Silver* which they coyn. 4. Near *Shabdonon*, a pretty Town, the *Momaki-Koni*, that is, the precious *Momy* is drawn out of a Rock; but it is only gathered for the *Sophy*, who carefully keeps it: Being a most assured counter-Poison or Antidote, and an excellent Salve against all Cuts or Ruptures, even within the body. *Bezar* comes likewise from this quarter. 5. *Chabonkera*. 6. *Darabegerd*: and 7. *Baefd*, are on the confines of *Fars* and *Kerman*. Some esteem them under the Province of *Fars*, others under that of *Kerman*; others make that a particular Province, which takes its name from the first of them, and which certainly is the greatest and the fairest. *Darabegerd*, as I believe, is the *Valasegerd* of the *Arab*, and the ancient *Pasagard*; there, where sometime resided, and where was the Tomb of *Ghur*, who here by this place defeated *Alsyages*, the last King of the *Medes*. And 8. *Gombrone*, seated on the Gulph of *Persia*, a fair Town, well frequented; and where the *English*, *Dutch*, and *Portugals*, keep their

their Factories for the benefit and support of the Trade; this place being now the Scale of Trade for all *Persia* (as was formerly *Ormus* and *Jasques*, being at present of little use.)

The Province of *KHERMAN*, of old *Caramania*, is one of the greatest, but not one of the best of *Persia*; yet they send forth several Commodities, as *Steel*, *Tarqueses*, *Rose-water*, *Tutty*, *Bourbatan*, *Hebe*, or *Kilworm*, of which they make the Confection *Alkermes*, *Sarmack*, which are black and shining Stones; which cures sore eyes, and paints black. *Carpets* the best in *Persia*, after those of *Tesed* (those of *Chorazan* hold the third degree.) *Arms* which the *Turks* buy at any rates, and *Scimitars*, which will cut a *Head-piece* without blunting the edge. The Country is somewhat uneven and Mountainous, which causeth barrenness; but the Vallies are very fertile and delightful, every where adorned with *Flowers*, and especially *Roses*, of which they make a great Revenue. Amongst its Cities, which are many; 1. *Cherman*, which communicates its name to the Province, makes a great quantity of *Cloth* of *Gold* and *Silver*; As also those *Scimitars* aforementioned. 2. *Zinganz*. 3. *Nahyan*, and others, are likewise in some reputation; but the Coast of *Ormus* is of great esteem, after it *Mochestan*. 4. The City of *Ormus* is seated in an Isle at the Mouth of the Gulph of *Persia*, being in compass about 20 miles; the City well built, and strongly fortified, seated at one end of the Isle, being in compass about two miles, adorned with a fair Market place, and some Churches; famous throughout the World for the great Trade, there negotiated; but of itself, exceeding barren, and only composed of Salt Rocks, of which their Houses and Walls are made; and in the Summer, is found so excessive hot, that the Inhabitants are forced to ly and sleep in *Wooden Cisterns* made for the purpose, and filled with Water, where both the Men and Women ly naked up to their Chins. In this Island there is no fresh Water; but what they fetch from other places there adjoining, which they keep in *Cisterns*; from whence they likewise get other Provision for their Food, being seated not above 12 miles from the Continent. The Commodities that are here found, are the rich *Gems* and *Spices* of *India*; The *Tapestries*, *Carpets*, &c. of *Persia*; the *Grammars*, *Mohairs*, and *Chamblets*, of *Turky*; the *Drugs* of *Arabia*, &c. The People hereof, in their Religion, in their persons and habit, have something of the *Arabians* in them, but more of the *Persians*. 5. *Mochestan* is the ordinary residence of the Kings of *Ormus*; because it is cool, its Waters excellent to drink, and its Land fruitful in Corn and Fruits, which is not found in the Island. 6. *Guadell*, and 7. *Patanis*, are the most famous Ports of the Coast.

Province of
Tcherman, its
Commodities,
chief places, &c.

The Isle and
City of *Ormus*
with its Trade
and Commodities.

The People of
Ormus.

The Province of *SABLESTAN*, inclosed with Mountains, between *Chorazan* and *Khermon*; it answers to *Caramania Deserta*; yet it hath many Cities and inhabited places, amongst others, *Zarany* towards *Khermon*. 2. *Bost*. 3. *Necbesart*, and 4. *Gisna-Cassaby*, towards *Chorazan*. Some place here *Bahajan*, from whence come the *Bala Rubies*.

Province of
Sablistan.

The Province of *SIGISTAN*, *SISTAN*, or *SAGESTAN*, *PATANES*, *CANDAHAR*, and *MACKERAN*, are the most Easterly Provinces of all *Persia*, and nearest the mouth of the *Indus*. *Sistan* is the chief City of *Sigistan*; *Mackeran* of *Mackeran*, which is seated on the Sea; and also *Buff*, which seems to keep its ancient name *Parfis*. The River *Imenel*, waters all these Provinces, and falls into the *Indian Ocean*, not far from the Gulph of *Indini*. Also *Grees* is the chief of *Patanes*, and *Candahar* of *Candahar*.

Province of
Sigistan, *Sistan*,
Candahar, and
Mackeran.

These are the Estates of the *Persians*, and we are to observe, that his principal neighbours are, the *Turks* on the West, the *Tartars* on the North, the *Mogols* on the East, and the *Portugals* on the South; in and about the Gulph of *Ormus*. These last cannot deprive him of any great part, their design being only to maintain their commerce in the *Indies*, yet they cease not to perplex him on the Sea; and have divers times taken and retaken *Ormus* from him. The *Mogols*, the *Tartars*, and the *Turks*, are troublesome neighbours unto him, and oft times his Enemies; because they are powerful and capable to seize on whole Provinces; which he recovers rather by strength; then otherwise:

The Neigh-
bours of the
Persians.

The Persians
much different
from the Turks.

For it must be confessed, that the *Persians* are more Active in their Arms, than all their Neighbours, except the *Portugals*: And they are likewise esteemed more courteous to strangers, more civil in their conversation, and more exact in their Policy and Government, than all the *Mahometans*. And if we would compare the manners of the *Turks*, with those of the *Persians*, we should find a great difference, and often much contrariety: For the *Persians* are courteous to strangers, the *Turks* abusive: The *Persians* esteem Study, the *Turks* neglect it: The *Sophies* of the *Persians* hold in honor, their Brothers and Kinsmen, the *Turks* set them to death: The *Persians* have amongst them great quantity of Nobles, the *Turks* make account of none but the Officers sent them from the Port: The *Persians* have the Cavalry, the *Turks* the better Infantry: both the one and the other are *Mahometans*, but they explain their *Alcoran* so diversly, that that alone is capable to carry them to the ruine of one or the other Empire, if they could effect it; and it seems, that the disposition of the one, and the other estate is very different, caused by their contrary manners, which makes them follow Maxims quite different from one another.

The Persian
forces consist
in Cavalry.

The Empire of the *Turks* is divided into many parts, cut asunder by several Seas, one upon the neck of another, and by great navigable Rivers; as the *Danube* in *Europe*; the *Nile* in *Africa*, and the *Euphrates* in *Asia*, which gives it great advantages, both for Trade, and the transport of its Forces; Whilst the Empire of *Persia*, consisting of an entire and solid Mass, full of Mountains in the middle of the Countrey; few navigable Rivers, and those which are distant one from the other, and falling into divers Seas, that they can have no communication one with another. Trade cannot be commodious, but abroad; and if they have occasion to transport any Troops from one Coast to another, it cannot be done without the expence, of much time and pains; And it is for this reason, the *Persians* serve themselves more of Cavalry, who at a need, are able to put into the field One hundred thousand Horse, and they have for the most part ready, 30, 40 or 50000: They entertain little Infantry, and those for the most part are strangers.

The Empire of
Persia of a dif-
ferent Soil.

The Empire of *PERSIA*, is of a large, and of so different a nature, as one would not take it to be the same, being in some places very barren, cold, and comfortless, scarce affording either Food for Man or Beast, as are the *North* parts which ly betwixt *Mount Taurus*, and the *Hircanian-Sea*, whereas *Southerly* it is very fruitful, the Soil rich, affording plenty of Corne, Wine, and all things necessary for the use of man, being pleasant, full of rich Pastures which are stored with abundance of Cattle, the Country watered with streams. The *Persians* are of a low stature, yet have great limbs, and strong, they are of an *Olive* colour complexion, hawked nos'd, and black hair'd, which they shave every eight days, and those which have not black hair naturally, by art make it so, as being in great esteem amongst them, they paint their hands and nails of a reddish colour. In their habit they follow much of the *Turks*, their clothes have no proportion to their bodies, hanging loose and large, much in the fashion of the *Womens*; their *Mendits*, by the *Turks* called *Turbants*, are made of *Cotton*, *Gloth* or *Silk*, *Stuff*, which is fine and of several colours, which they wear on their heads, as we do Hatts, many of them wear them of Red, but the Priests, as also his other Garments are white; their Garments they girt about their waists with a Searf; under these Garments they wear breeches like our drawers, their stockings are for the most part made of *Gloth* without any shape in them their shoes are picked toed, and like slippers; by reason of their often putting them off and on, not wearing them in Houses. The *Women* wear much finer Stuffs than the men, and have nothing to ty about their waists, their drawers, stockings, and shifts are like those of the men; they wear their hair loose about their shoulders in several tresses, having no other Ornament except it be 2 or 3 rows of *Pearls*, which they fasten to their fore-head, and so hangs down on each side of their face to be fastned to their chin; the young Maids wear rings, and bracelets about their hands and armes, also rings with precious stones in their right nostrills, as the *Tartarian Women* do. The *Women* in the Streets goe with white Vails over their faces, down to their knees: The People in this Na-

The People of
Persia, and
their habits.

tion

tion as well Men as Women, according to their degrees in honour, or riches do exceed in costly habits, in which they are exceeding neat and curious, not admitting so much as a spot upon their Clothes, which neatness they likewise observe in their Houses, which are for the most part well furnished; as also in their meats and drinks, which are excellent, delightful and curious. They are great dissemblers, and much addicted to ill language if provoked to it. They are of a good nature, and very sensible of kindness done to them; but where they hate, are mortal enemies: They are courageous and good Soldiers, great haters of Cowards; very ingenious, of a ready Wit, and sound Judgment, much addicted to reading several Authors, which tend to the knowledge of Poetry, Philosophy, the Law, Medicine, several of the *Mathematicks*, as *Arithmetick*, *Geometry*, *Astronomy*, and its influences, as *Astrology*, which they give much credit unto. These and the like Arts and Sciences are studied of young Students at several Colleges and Universities, by experienced persons in the same, who there reside. They are very ingenious in Fire and Water-works, are great lovers of their pleasure, in several recreations, as *Hawking*, *Hunting*, *Riding a tilt*, &c. they are very complementary, obliging, and courteous, especially to strangers, not addicted to covetousness, usury being forbidden amongst them; they are generally much given to Luxury, not contenting themselves with several Wives, but must also have the use of Concubines, which is allowed them; they are also given to Sodomy, but *Adultery* they severely punish. When a young man desires to marry, and hath heard of a maid as he thinks he can love, he hath some of his friends to treat with her parents or friends about it; for the maid is not to be seen, and if they agree, then they proceed to Articles, which is to be performed by the friends of the Bridegroom, it not being there the custom for the man to receive a portion with her, as it is here with us, but contrarily, the Dower which by both of their friends is agreed on, he either sends unto her two or three days before the consummation of the Marriage, which is either in Money or Goods, as a recompence to her Parents or Kindred, for their care in her education; or else engages to pay her if in case a Divorce should happen, which is usual amongst them upon a dislike or disagreement, as being allowed of by their Law; this done their Agents, in the name of the betrothed couple, go to their Priests or Ecclesiastical Judge, who being satisfied that it is done by the mutual consent of their friends, marries them by the said Agents, but very privately: the Marriage day being agreed upon, the Bridegroom sends his Bride several toys, as Pendants, Bracelets, Rings or the like Ornaments; also several dishes of meat, for the entertainment of her friends and relations; who about the evening bring the Bride to the Bridegroom, being mounted on a Horse, Mule or Camel, being covered with a Vail of *Crimson Taffety*, over her face down to her knees, and accompanied all the way with Musick, and being entered the *Mosque*, the *Muloy* demands their liking; then the Bride requireth three things, *viz.* *Bed-right*, *Food* and *Rayment*; and the Parents having declared their consent, the Priest encircles them with a cord, conjoynes their hands, takes a reciprocal Oath, and calls *Mahomet* to witness, which ended the *Caddi* enrolls their names, with the day of the month, year and hour of the day of their Nuptial, and so dismisses them; and being come to the Bridegrooms House, they take her off, and lead her into a room where she and her friends sit, the Bridegroom and his friends being in another room, and after supper is ended, they conduct her to another room where she is to ly, to which the Bridegroom is soon brought, where he receiveth his first sight of her, the company with drawing themselves out of the room, he falls to his embracing her, and after the first enjoyment of her, he leaves her, and goeth to his friends, to spend some hours in their company: if he finds that she hath lost her virginity before, he hath power to cut off her Ears and Nose, and to turn her, and her relations and friends out of doors, which is a great disgrace unto her and them; but if she be a pure Virgin, then he sends the tokens of it, by an ancient Woman, to her relations, and then for joy they continue their entertainments three or four days together, having several diversifications, as *Musick*, *Singing*, *Dancing*, or the like, the next day after their Marriage,

Their manners
dispositions,
&c.

Their Marri-
ages.

Their Mar-
riages.

Marriage,

Men allowed
many Women.Their Feasts
are munificentThey are
much addicted
to Women.The Persians
very superstitious.

Their Religion

Marriage, they both wash and bathe themselves, they are allowed by the Law four Wives, (of which the first hath the preemency,) but they must be of their own Religion; and for Concubines, they may be of any Religion, and have the liberty of taking as many as they please, paying them a certain stipend or salary, as they shall agree by the week, month, or longer, as they shall agree, at the end of which term, they are quit from their Obligation; and may leave each other without another agreement made betwixt them, the men are exceeding jealous of their Wives, inasmuch as they are forbidden the liberty of society with any man, which custom is used among the *Italians*.

In their Feasts they are very stately, having not only all varieties of Meats, as *Flesh, Fowles, Fish, Baked-meats*, with excellent *Wine*, and great attendance, but also pleasant *Fruits, stately Banquets of Sweetmeats*, and to make their entertainments compleat, they are furnished with curious *Musick*, as well Vocal as Instrumental, their Rooms or Halls, where they make these entertainments, are very spacious, and curiously adorned with stately *Hangings of Tapestry*, and beautified with varieties of *Paintings*, but most of them being naked Figures which amongst us would be accounted unseemly, their rooms being perfumed with sweet *Odors and Waters*, so that nothing is wanting for the pleasing of the senses; their way is to sit upon the ground on *Carpets*, being the Custom of the *Turks* and other *Eastern Countries* so to do; being also used to *Collations* in afternoons and nights, wherein they have excellent *Fruits, Sweetmeats, Wine, Musick and Dancing*. They are great lovers of Women, inasmuch that at their Feasts they are always furnished with them, being such as they call *Dancing-women*, who being brought up in *Dancing, Singing*, and playing on *Instruments*, make it their employment so to do at Feasts; these Women for the most part are very handsome, and richly attired, having about them costly *Jewels, Pendants, Rings*, having about their legs *Bells*, like *Morris-dancers*; and he who hath a desire to enjoy a Woman, riseth from his Seat, and taketh which of these *Dancing-women* he most lancies, and goes into a private room, and after he hath enjoyed her to his content, he comes to his place, and the Woman goes to *Dancing*, without any shame to the one, or notice taken of the other. They are much given to drink *Wine, Tea, and Coffee*.

The *Persians* are very strict, superstitious, and ceremonious in their Religion, (as the *Turks*), but differ much from them in the exposition of their *Alcoran*) as in their *Pilgrimages to Mecca*, in their *Sacrificings*, in their observing of days, on some of which they will not do any business, either tending to profit or pleasure, refraining from all Acts of Sin as nigh as they can, and one of these days they hold to be the next *Wednesday* before the *Vernal Equinox*, by which they begin their new year, in their processions, and celebrated Festivals in commemoration of their several Saints, which they perform with great devotion, mixt with no less state in their several Sepulchers, where their saints are interr'd, which are very large and magnificent Structures, so rich in Gold and Silver, with which it is adorned, as well in Lamps and Candlesticks, as otherwise, that it can hardly be express'd; in which places they have their Priests, which attend and offer up their devotions and explain the *Alcoran*, which they read out of Books, which they have in their *Library* being Manuscripts either upon Paper or Parchment, being curiously bound, neatly painted within, and covered with Plates of Silver or Gold, carved or embossed, or with paintings; also the *Persians* have not the same *Miracles*, the same *Saints*, the same *Mosques*, and the same Ceremonies as the *Turks* have; they use *Circumcision*, but not till the Children are 7, 8 or 9 years old, they are very devout, especially in their prayers, which they use five times a day, as being obliged by their Religion so to do; also in their Prayers for the dead, over their Graves which devotion is used during the time of their *Lent*, which they keep for a month, in which time they neither eat nor drink betwixt Sun-rising and Sun-setting, but in the nights they eat and drink what they please; yet for a sum of money they may have a dispensation: they interr their dead within three hours after the life is departed, unless it be in the night, so that then they let the corps alone untill the morning, they wash or bathe the bodies of their dead, before they

they are interred, in a great Cestern, which they have for the same purpose near the Church, to which place they are carried on a Bier in their Clothes, and after they are stript and Wash'd, they put them in clean linnen, anoint them, and so bear them to the Grave, being accompanied with his Friends, Relations, Servants, &c. in this order; first goeth those of his blood, next his *Varlets*, who go naked to the Waist, the rest in troozes, who to express their love, scratch, and burn their Breasts; Arms, and other parts, so that the blood oft issueth forth; then follow many youths on whose shoulders are affixed some texts taken out of the *Alcoran*, together with Elegies of the deceased, in the next place follow several persons of the best rank, each holding a cord that is affixed to the *Hearse*; and on every side abundance of People bearing in their hands, Garlands of Flowers, Lawrels, and such things as besit the Season, then follow some Horse-men half naked, who oft times massacre their carcasses, and in the last place follow weeping Women, that is, such as are hired to weep and howle, the better to provoke others to passion; and being brought to the Grave, the Priest after he hath performed several Ceremonies which he readeth out of the *Alcoran*, the Corps is interred with his head towards *Mecca*, his face towards Heaven, and his armes expanded, (as they say) to imbrace their Prophet *Mahomet*, placing two Stones, one at the head, and the other at the foot of the Grave, on which are engraven in *Arabick Characters*, the persons name, quality and time of burial, and to take their leave, but for a good while cease not to visit the Grave twice a day, beseeching *Mahomet* to succour him against his two bad Angels, of whom they have this opinion; So soon as the Corps is interred, there are two hideous Devils assaile him, the one they call *Muegar*, which is armed with an Iron Club, and the other *Quariggar*, armed with a Hook of flaming brass, and in this horrid posture, they view the Carcass, and in an insolent manner, command him to raise his head, to fall prostrate upon his knees, and begg his soul, which then re-enters the body, and gives an account unto them of all the actions of his life, and upon examination and confession, if it appear that his life was good, they vanish away like Spirits, and two good Angels come (apparelled in white) to be a comfort unto him, and protect him untill the day of doom, not stirring from him, but sitting one at his head, and the other at his feet. But on the contrary, if it happen that his life is found bad, then these Infernal Imps are his tormentors, the one knocking him on the head such blows with his Iron Club, as bease him (as they say) ten yards into the Earth, and the other drags him up with his flaming hook; and thus is he knockt down by one, and dragged up by the other, untill *Mahomet* sends him a deliverance; and this (as *Sir Tho. Herbert* relateth in his book of Travels) is their belief, which if it be true, I doubt they will have many a sound knock and torne place before their delivery. To persons of quality, they observe more Ceremonies than to those of the ordinary degree, making Feasts on the third, seventh, and fortieth day after the Corps is laid in the Grave, at which Feasts they are charitable to the poor in their Almes Deeds.

The King of *Persia* governs by an absolute power, disposing of the lives and estates of his Subjects as best pleaseth him, making his Will his Law, not any one daring so much as to murmur, though his actions are never so much unjust. Their Kings come to the Government by succession, and not by election; inasmuch that if the King hath no Children which are lawfully begotten as by his Wives; for want of such those of his Concubines shall succeed him.

Upon the Coronation of their Kings, amongst other Ceremonies, he is presented with a Crown, by one of their chiefest Lords, which he takes, putting it to his forehead, and after kissing it thrice in the name of *Mahomet*, and of *Aaby*, he delivers it to the grand Master of the Kingdom, who puts it on his head, the People making great shouts and acclamations, kissing his feet, and presenting him with great presents, which done, the rest of the day they spend in feasting and other jovialties, but in all their Ceremonies there is not so much as an Oath imposed upon him; as, for his well governing them, and keeping

Ceremonies in
their burials.The King of
Persia his power.The Coronation
of their
Kings.

keeping and preserving their fundamental Laws, and other of their rights; as amongst us done, but all being left to his sole power, as being absolute.

There are belonging to the Court several Officers, as *Chancellor, Secretary of State, Controller, Master of the Horse, Master of the Ceremonies*, together with several other Officers, as amongst our Courts are found. The Administration of Justice is decided by the King, but first tried by the secular Judges who examine the same, and deliver up their opinion to the King. They have several strict and severe punishments, which they inflict upon the offenders according to the heinousness of their crimes, for some offences they cut off the Ears or Nose, sometimes the Feet or Hands, for others to be beheaded, for some again, they are tyed between two boards and so sawed asunder, with several other cruel deaths which are too tedious to name. In their Military affairs they are very experienced, their Army consisting only of Horse, who have for their Armour Darts and Javelins, yet have they some in the nature of our *Dragoons*, which are mounted on Horses, who have Muskets for their Arms; as for an Army of Foot, together with the assistance of great Guns by them, is not so much set by, as being troublesome, and a detarder of them from their speedy and great marches, they are very expert in all stratagems of War, which gives them a great advantage over their enemies.

Here doth inhabit a sort of People called *Gaws*, and are of a much different Religion from the *Persians*, observing divers Ceremonies peculiar to themselves. In their Baptism they use no Circumcision, instead of which they wash the Child, &c. At their Nuptials after the Priest hath said some Prayers, he takes water, washes both their fore-heads, and gives the Benediction. When they are sick they make Confession to the Priest, and bestow their Almshouses in hopes of Pardon of their Sins. They bury not their dead, but carry them to certain enclosed places, where they fasten them to high Stakes, with their faces towards the East. They bear a great adoration to Fire. They are exceeding cleanly in all things, and wash often in *Cow's-piss*, which they hold to be a good purification. Upon confession of their Sins to their Priests, they are constrained to Penance, in which several Ceremonies are observed. They have so great a fear for Dogs, that when any die they are carried out, and prayers are made for them.

They have great quantity of all sorts of Cattle, Grain and Fruits. Amongst their Fruit-trees, they have great quantities of white and black *Mulberry-trees*, which grow not above 5 or 6 foot high, so that one may easily reach up to the branches, and in the Spring time, when these Trees begin to shoot forth their leaves, they begin to hatch their Silk-worms, which they do by carrying the seed under their arm-pits in little bags, which in seven or eight days will receive life, then they put them into a wooden dish, upon the *Mulberry-leaves*, which they once a day change, and take a great care that they be not wet; at the end of five days they sleep three, after which they dispose of them into Rooms or Barns, prepared for the same purpose, upon the beams of these buildings they fasten laths, or such like pieces of wood, upon which they lay *Mulberry-branches*, which hath the leaves on, whereon they put the Silk-worms hatching them every day, and as they grow in bigness, so oftner to twice or thrice a day; before they begin to spin, they sleep about eight days more; after which they begin, and in 12 days they have finished their Cocoon, the biggest they make choice of for seed; all the rest they cast into a Kettle of boiling Water; into which they often put a whisk made for the purpose, to which the Silk-sticks which they immediately wind up; and that which they keep for Seed, they lay upon a Table, out of which, in the space of fifteen days comes forth great Buggs, which afterwards turn to thin silks, *Bugs*, which in a few days they gender and lay Eggs, and then die, not caring any thing from their first spinning; which is much, for things to live so great a while, without caring any thing. And of these Silk-worms, thus ordered, they make a great Revenue.

And of these Silk-worms, thus ordered, they make a great Revenue.

Their Courts of Judicature, and their Justice.

Their Military Affairs.

A discourse of Silk-worms, and making of Silk.

To give an account of the manner of spinning.

Reasons why the Persians are so clean.

The Empire of the GREAT MOGOLL, which comprehendeth that which is upon the Main Land, wherein are contained several Kingdoms or Provinces; the chief of which are,

Cabul,	Cabul,
Attock,	Attock,
Multan,	Multan,
Candahar,	Candahar,
Buckor,	Buckor-Suckor,
Tatta,	Tatta,
Soxer,	Diul,
Calimere,	Janagur,
Bankib,	Sirinaker,
Kabares,	Beihar,
Naugracut,	Dankalar,
Siba,	Naugracut,
Jamba,	Serekegar,
Bakar,	Jamba,
Samball,	Bikaner,
Gor,	Samball,
Kandwana,	Gor,
Patna,	Barabantaka,
Jesul,	Patna,
Udella,	Rajapore,
Mevat,	Jekane,
Pitan,	Narvall,
	Pitan,

Guzurate, or Cambaya,

Chitor,	Baroch,
Malwar,	Cambaya,
Candis,	Armadabad,
Berar,	Diul,
Gualeor,	Chitor,
Narwar,	Rantipore,
	Brampore,
	Shapor,
	Gualeor,
	Gehud,
	Bengala,
	Changan,
	Gour,
	Halabaf,
	Satigan,
	Lahor,
	Junupar,
	Jeselmere,
	Bando,
	Delly,
	Agra,

Pengala,

Lahor,	Amadanager,
Junupar,	Chaul,
Jeselmere,	Vifapor,
Bando,	Paranda,
Delly,	Ga,
Agra,	Dolabad,
	Golconda,
	Muslipatan,
	Onor,
	Bifnagar,
	Trivalur,
	Tring,
	Negapatan,
	Sadrapatan, or Fort St. George,
	Malapour,
	Geldiva,
	Madura,
	Tuticori, and Manancor,
	Calicut,
	Cochin,
	Cananor,
	Coulun,
	Cranganor,
	Cerate,
	Cota,
	Changanara,
	Pegu,
	Brem,
	Canrane,
	Ava,
	Tinco, and Prom,
	Odia,
	Banckock,
	Lugor,
	Marabon,
	Cambaya,
	Sacotay,
	Tanallerin,
	Juncalson,
	Quana,
	Peta,
	Malacca,
	Thor,
	Patane,
	Palocaccin,
	Kecio,
	Macara,
	Panin,
	Goeteinficos,
	Chubedu,
	Chudube,
	Durondia,
	Dos Cocos,
	Andemaan,

DECAN,

GOLCONDA,

BISNAGAR, or NARSINGUE,

MALABAR,

PEGU,

SIAN,

Peninsula of MALACCA,

COCHIN-CHINA,

ISLES in the Gulph of SIAN, among which are

ISLES in the Gulph of BENGALA, among which are,

INDIA, or the EAST INDIES, which (according to its form and disposition of its Estates) may be divided into three several Parts; to wit,

The Peninsula of INDIA without the GANGES, and Westwards, and between the Mouths of the INDUS and the GANGES; with its several Kingdoms, or Countries of

The Peninsula of INDIA within the GANGES, and Eastwards; wherein are contained several Kingdoms, Countries, Isles, &c. the chief among which are

Westwards, and towards *PERSIA*, from the first Streams of the *INDUS* unto its falling into the Sea, are those of

On the North, and between the Mountains which divide this Empire from *TARTARIA*, or between the Springs of the *GANGES* and the *INDUS*, are

On this side, or without the *GANGES*, where are those of

Within the *GANGES*, are those of

The Empire of the *GREAT MOGOLL*, with its several Kingdoms, or Provinces, as they lie

Southerly, and towards the Gulphs of *BENGALA* and *CAMBAYA*, and the Peninsula of *INDIA* within the *GANGES*, are those of

In the Middle of the *EMPIRE*, and are those of

Cabul,	Cabul,
Attock,	Gaidel.
Multan,	Attock,
Candahar,	Pucko.
Buckor,	Multan,
Tatta,	Seerpore.
Hajacan,	Candahar,
Soree,	Gaubccuana.
Cashmere,	Buckor-Suckor,
Bankish,	Raures.
Kakates,	Tatta,
Naugracut,	Diul,
Siba,	Louebander.
Jamba,	Chazan,
Bakar,	Dunkil.
Samball,	Janagar,
Gor,	Cacha.
Randuana,	Syrin-kar,
Patna,	Chonab.
Udella,	Bethar.
Mevat,	Dankalar,
Pitan,	Purhola,
	Naugracut,
	Callamaka.
	Hardware,
	Serenegar.
	Jamba,
	Balcory.
	Bikauer.
	Samball,
	Menepore,
	Chappergat.
	Gor.
	Barakantaka.
	Patna.
	Rajapore.
	Jekanic.
	Narvall.
	Pitan.
	Canojo.
	Surat.
	Baroche.
	Cambaya.
	Armadabad,
	Agra.
	Diul.
	Brodra.
	Chetyepour.
	Bifantagan.
	Mangalor.
	Jaquere.
	Chitor.
	Chitapur.
	Rantipore.
	Ougel.
	Narvar.
	Brampore.
	Mandow.
	Pala.
	Gurchitto.
	Shapor.
	Gulcor.
	War.
	Gchud.
	Bengala.
	Chatigan.
	Goura.
	Patana.
	Tanda.
	Daca, and Bannara.
	Ragmehel.
	Holobasi.
	Satigan.
	Mandaran.
	Ougely.
	Xore.
	Bellefor, and Angara.
	Lahor.
	Fetipore.
	Femmeri, and Guzurat.
	Jenupar.
	Sirima.
	Tanasser.
	Hendowne.
	Meatra.
	Gidemere.
	Moulto.
	Radinpore.
	Bando.
	Toury.
	Afmere.
	Delly.
	Acarnapori.
	Agra.
	Secandra.
	Fetipore.
	Scanderbade, and Ilay.

The

DECAN, with its Parts of

GOLCONDA,

BISNAGAR, or *NARSINGUE*, with its Estates and Coasts of

MALABAR, with its several Kingdoms, or Provinces, to wit

Decan, particularly so called,

Cunkan,

Balaguare,

Canara,

Bifnagar, particularly so called,

Gingl,

Tanjaor,

Maritim Places in *BISNAGAR*, *GINGL*, and *TANJAOR*, bearing and known by the name of the Coast of *Chotto-mandel*.

Madurt,

Maritim Places of *MADURE*, and called the Coast of *Pescheria*.

On the Sea, or Coast of *Malabar*, as

In the High Land, as

In the Mountains, as

Amedansger,	Calicut.
Chaul,	Cochin.
Dabul,	Cannor.
Vifapor,	Coulun.
Solapori,	Chambais.
Paranda,	Montigue.
Goa,	Badara.
Pagode,	Tanor.
Zanguizara.	Cranganor.
Lifpor,	Porca.
Beder,	Calcoulan.
Dolatabad,	Travancor.
Golconda,	Cote.
Mufalipatan,	Cote.
Gudavari,	Auriola.
Vixaparan,	Cokagan.
Narlingupatan,	Bipur.
Orixh,	Cocura.
Palhor,	Papur.
Calcote.	Curiga.
Quor,	Muterte.
Gorcopa,	Marta.
Barcelor,	Batimena.
Batcala,	Mangat.
Magalor,	Paru.
Bacanor,	Pimienta.
Bifnagar,	Changanara.
Narlingue,	Trivalar.
Vellur,	Panapelli.
Cangevaran,	Angamala.
Cirangapatan,	Ticancutes.
Trivalur,	Punhali.
Triplity.	Cavanrette.
Gingl,	Pande.
Cindambara,	
Chittapacama.	
Tanjaor,	
Calten,	
Trinidi.	
Negapatin,	
Triminapatan,	
Trangabar,	
Coloran,	
Fort St. George, or	
St. David's Island,	
Malapour,	
Paliscate,	
Chiricote,	
Mufalipatan,	
Calcut,	
Guedria,	
Pentapou,	
Madure,	
Brimaon,	
Periapatan,	
Puncala,	
Jacacoury,	
Manapet,	
Vaipar,	
Trichandur,	
Chereacale,	
Tutucori,	
Ille of Kings,	
Bambar,	
Calcutre,	
Manganco,	
C. d. d. d.	
Calicut.	
Cochin.	
Cannor.	
Coulun.	
Chambais.	
Montigue.	
Badara.	
Tanor.	
Cranganor.	
Porca.	
Calcoulan.	
Travancor.	
Cote.	
Cote.	
Auriola.	
Cokagan.	
Bipur.	
Cocura.	
Papur.	
Curiga.	
Muterte.	
Marta.	
Batimena.	
Mangat.	
Paru.	
Pimienta.	
Changanara.	
Trivalar.	
Panapelli.	
Angamala.	
Ticancutes.	
Punhali.	
Cavanrette.	
Pande.	

The Peninsula of INDIA within the Ganges: In which are the Kingdoms, Countries, Isles, &c. of

PEGU, with its Kingdoms or Parts of

SIAN, with its Kingdoms or Estates of

Peninsula of MALACCA, whose Parts

Towards the Gulph of BENGALA, and Westwards, are

Towards the Gulph of SIAN, and Eastwards, are

COCHIN-CHINA, with its Kingdoms, People, &c. of

COCHIN-CHINA, particularly so called, with its Provinces of

TUNQUIN, with its Parts or Provinces of

The People called the Laves.
The Kingdom of Ciocangue.
The People called the Gueyes.
The People called the Timocoves.

ISLES seated in the Gulph of SIAN, viz.

ISLES seated in the Ocean, called the Gulph of BENGALA; viz.

Martavan,

Mattar,

Tangu,

Martin,

Jangoma,

Brama,

Sian,

Martaban,

Jangoma,

Camboja,

Tanasserin,

Judicalon,

Quoda,

Pera,

Malacca,

Ihor,

Pahang,

Patane,

Singora,

Brodelong,

Ligor,

Chiampa,

Ranran,

Pulocanbis,

Quagiva,

Cacciam,

Sinuva,

Bochin,

Ghean,

Tinhoa,

Beramar,

Kedom,

Kenam,

Kethay,

Macara,

Panian,

Cara,

Goeteinficos,

Tyamciefi,

Cofyn,

Chubedu,

Chudube,

Ledoa,

Dos Alevantados,

Durondiva Siriaon,

Sobollas,

Dos Cocos,

Andemaon,

Dos Gabbes,

Tanasserin,

Tavay,

Alta,

Crara,

Caremubar,

Raza,

Dos Sombreros de Palm,

Siano,

Sambilano,

Batun,

Pera,

Pinaon,

Ganal de St. Jorgo,

Nigubar.

Pegu,
Brama,
Canarane,
Pandior,
Mandvanelle,
Caffubi,
Bordia,
Ava,
Tinco,
Prom,
Tolena,
Largata,
Tipouta,
Chacommas,
Maon,
Arracan,
Dogon,
Ledoa,
Cofmil,
Xara,
Dunbacaon,
Chibode,
Odias,
Banckock,
Ogmo,
Lugor,
Mirgin,
Sacoray,
Juropifan,
Martaban,
Macuria,
Cuidad de los Reyes,
Macaon.

Jangoma,
Cambaya,
Raveca,
Langor,
Carol,
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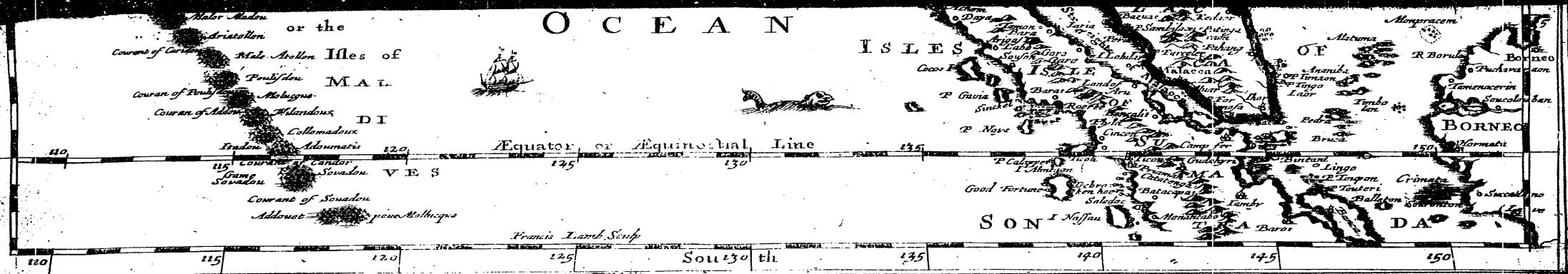
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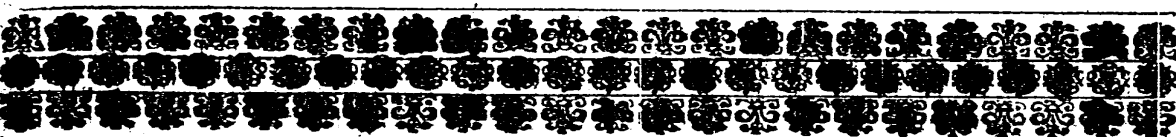
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Turaoh,
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*To the Honorable the Governor Deputy
and Court of Committees of the Company of
Marchants trading in to the East Indies
This Mapp is humbly dedicated by Ric: Blome.*





INDIA,

OR THE

EAST-INDIES.

INDIA, of which we treat at present, is that which the Ancients have known under the name of *India*, or the *Indies*, and which the Moderns call the *Asiatick*, or *East-Indies*; because they likewise call *America*, though very improperly, the *West Indies*; these lying West, those East from our Meridian. But under the name of *East Indies* divers Authors comprehend all the most Oriental parts of *Asia*, that is to say, all that is above and beyond the River *Indus*, from whence the Country takes its name; and likewise *China*, and the Isles of *Asia*, which are in the *Oriental Ocean*, pass under the name of these *Indies*. Its Name.

But leaving *China* and the Isles of *Asia* apart, we may divide *India*, both because of its Form and the disposition of its Estates, into three several parts; of which, the first shall comprehend that which is upon the Main Earth, the rest shall be in two *Peninsula's*; of which, the most Western, and between the Mouths of *Indus* and *Ganges*, shall be called *The Peninsula of India without the Ganges*; and the most Oriental, and beyond the *Ganges*, shall be called *The Peninsula of India within the Ganges*. Its bounds, and division into Parts.

We will esteem in the first part, that which the Great *Mogoll* at present possesses, and what is engaged in his Empire. In the two *Peninsula's* we shall have a great number of Kingdoms and Principalities; neither the one nor the other having less than fifty, which by little and little are reduced into a less number, the strongest becoming Masters of the weakest. Thus the great *Mogoll* made himself Master of 35 or 40 Kingdoms, of which some had before ruined many others.

The Empire of the GREAT MOGOLL.

OF the several Provinces, or Kingdoms, under the Empire of the Great *Mogoll*, as appears in the *Geographical Table* of the Empire apart, have their Names common with those of their chief Cities, and are all rich, and since their separation they compose fair and powerful Estates: And first with *Cabul*.

CABUL, whose chief City bears the same name, is the most advanced towards *Persia*, with *Usbeck* or *Zagath*. The Springs of *Nilab* and *Behat*, which fall into the *Indus*, and possibly likewise of *Indus*, are in this Kingdom or Province. The City of *Cabul* is great, but the Houses low; its strength lying in the two *Fortresses*, and in the great Road of *Labor* to *Samarcand* in *Usbeck*; and to *Tarchan*, the chief City of *Cascar*, from whence they bring *Silk*, *Musk*, and *Rhubarb*, from *China* and *Cathay*. Kingdom or Province of Cabul.

·ATTOCK

Attock. *ATTOCK* is on the *Indus*; its City is fair, the Fortrefs good; and when the Limits of the Estates of the Kings of *India* lay between *Labor* and *Attock*, it was of greater consideration than possibly it is at present.

Multan. *MULTAN* is rich, by reason of the fruitfulness of its Soil and Traffick, which the Rivers of *Indus*, of *Behat*, of *Nilab*, and of *Rawey*, which fall into the *Indus*, do much enrich. The City of *Multan* is great, ancient, and not above two or three Leagues distant from the *Indus*. Its principal Commodities are *Sugar*, *Galls*, *Opium*, *Brimstone*; several Manufactures of *Silk* and *Wool*, &c.

Candahar. *CANDAHAR* is far engaged towards *Persia*, its chief City being so called, which is great, and of some Trade.

Buckor. *BUCKOR* hath for its chief City *Buckor-Suckor*, which lies along the River *Indus* (which runs through the Province) which makes it very fertile. The City is of an indifferent extent, and of some Trade.

Tatta. *TATTA*, whose chief City bears the same name, is divided by the River *Indus* into several Isles. In this City and Province are held to be the most industrious Tradesmen of the whole Kingdom, by reason of which here is found a good Trade, drove by Merchants of several Countries.

Buckor, there where the Rivers of *Rawey* and *Caul* fall into the *Indus*, and between *Multan* and *Tatta*; and *Tatta* where *Sindeppes*, between *Buckor* and the Sea: *Lourebander* and *Diul* serve for Ports to *Tatta*. *Lourebander*, there where the *Indus* begins to divide it self into several Branches; *Diul* on the great Sea. Moreover *Diul* and *Diul* are two different places, being distant 150 Leagues from each other. *Diul* in the Kingdom of *Guzurate* or *Cambaya*, belongs to the *Portugals*: *Diul* in that of *Tatta*, is the Great *Mogolls*, who keeps there a Governour.

Hajacan. The Province of *HAJACAN*, Westwards of the *Indus*; of very small account, having no places worthy of note.

Soret. *SORET* is seated between the Kingdoms of *Tatta* on the West, of *Guzurate* on the East. It hath for its chief City *Janagar*; the Province is but of little extent, but very fruitful, rich, and well Peopled.

Cassimere, Bankish, Kakares, Naugracut. *CASSIMERE* or *QUERIMUR*, *BANKISH*, *KAKARES*, and *NAUGRACUT*, are between the River *Indus* and *Ganges*; all encompassed with the Mountains of *Bimber* towards the *Indus*, of *Naugracut* towards the *Ganges*, of *Caucasus* towards *Tartaria*, of *Dalanguer* which crosses them, and separates the one from the other; and they, the Forests of these Mountains, which yielded so much Wood for the Vessels which *Alexander* the Great cauled to be builded, to descend the *Indus*. And these are at present those Forrests which give so much divertisement of chase to the Great *Mogoll*. *Sizinaket*, or *Sirinakar*, though unwall'd, is the chief City of *Cassimere*; *Beishar* of *Bankish*; *Dankalar*, and *Purhola*, of *Kakares*; and *Naugracut* of *Naugracut*. In this last the Temple of the Idol *Maria* is paved, wancotted, and Seiled with Plates of *Gold*: And in *Callimacka* there are Fountains very cold, and near to Rocks, from whence seem to flash out flames of fire.

Siba. The Province of *SIBA* hath for its chief City *Hardware*, which gives its rise to the River *Ganges*; and *Serenegar* on the River *Manfa*.

Jamba. The Province of *JAMBA* gives name to its chief City.

Bakar. The Province of *BAKAR* lieth on the West of the *Ganges*, and hath for its chief City, *Bikaner*.

Sambal. The Province of *SAMBAL* takes its name from its chief City so called. This Province is likewise called *Doab*, that is, two Waters; its situation being between the *Ganges* and *Semena*: which, together with the three Provinces last mentioned, are without, or on this side the *Ganges*, reaching almost from its Spring-head unto the River *Semena*, or *Gemeni*.

Gor. The Province of *GOR* takes its name from its chief City, and gives its rise to the River *Perselis*, which falls into the *Ganges*; the Province being very Mountainous.

Kanduaana. The Province of *KANDUANA* hath for its chief City *Karakantaka*. This Province, and that of *Gor*, which is beyond the *Ganges*, doth end the Estates

states of the *Mogoll* towards the North, meeting with the *Turtays* of *Turqueslan*.

The Province of *MEVAT* is very barren, whose chief City is *Narval*, which ends it towards the People called *Maug*; and others which we esteem to be in the *Peninsula* of *India*, which is in the *Ganges*.

The Province of *UDESSA*, is the utmost of the *Mogolls* Territories towards the East, which is also within the *Ganges*; its chief place is *Jebanac*.

The Province of *PITAN* is on the West of *Jamba*, being very Mountainous, whose chief City gives name to the Province. The River *Randa* runs through the City and Province, and falls into the *Ganges*.

The Province of *PATNA* is fruitful, whose chief City is so called, seated on the River *Persely*; but we have a very feeble and incertain knowledge of all these Parts or Kingdoms; but those which are towards the South, and particularly *Guzurate* or *Cambaya*, and *Bengala*, are better known.

The Province of *GUSURATE*, by the *Portuguese* called the Kingdom of *CAMBATA*, hath more than 30 great Trading Cities, and is without doubt the noblest, greatest, richest, and most powerful Province of all the *Mogolls* Country, yielding a yearly Revenue of 15 or 20 Millions of *Gold*; and its King hath brought into the Field 150000 Horse, and 500000 Foot, 1000 Camels, &c. The Country likewise is esteemed the most fertile of all *India*; producing all sorts of Grains, Fruits, and living Creatures, quantity of Drugs, Spices, and precious Stones, not having any Mines of *Gold* or *Silver*, but three Plants which bring it an inestimable quantity; as well from the Gulph of *Persia* and the *Red Sea*, as from all the Coasts of *India* and *China*. These Plants are *Cotton*, *Amiseed*, and *Opium*: besides which there are varieties of other rich Commodities, as *Oil*, *Sugar*, *Indico*, *Ambergreece*, *Soap*, *Comfits*, *Medicinal Drugs*, *Paper*, *Wax*, *Hony*, *Butter*, *Salt-Peter*: Manufactures of *Cotton*, *Linnen-Cloth*, *Carpets*, *Cabinets*, *Coffers*, *Cases*, with a thousand other curiosities, which its Inhabitants know how to make and sell, being the ablest Merchants of *India*.

They are likewise of a good Spirit, and addicted to Letters; serve themselves of all sorts of Arms, yet know nothing of Nobility, but by abundance of Riches: They are all *Pagans* or *Mahometans*. The *Pagans* for the most part are *Pythagoreans*, holding the immortality of the Soul, and that it passes from one body to another: for which reason they so much honour Beasts, that they eat them not, but keep Hospitals to receive such as are sick and lame. The *Cows* here are in such esteem with them, that a Merchant *Banian* (according to the report of *Texera*) spent 10 or 12 thousand Ducats at a Nuptial, marrying his *Cow* with his Friends *Bull*. This Kingdom is in part *Peninsula*, between the Gulphs of the *Indies* and *Cambaya*, and in part on the Main, which stretches it self towards *Decan*. This Province though of a large extent, yet hath above 120 Leagues of Sea-Coast, on which it hath several fair and rich Cities, and of a good Trade: As also great quantities of Inland Towns and Cities, the chiefest whereof are, *viz.* *Surat*, seated on the River *Tapta*, which falls into the Sea 12 miles below the City: It is a City no less great and rich, than populous and famous, and enjoyeth as great a Trade as any City in *India*; being much frequented by the *English* and *Dutch*, where they have their Presidents and Factories, and where they have their Houses for the negotiation of their affairs, which are spacious and well built. This City is built four square, its Houses flat, after the *Persian* mode, and reasonably beautiful, having the benefit of pleasant Gardens: It hath several *Mosques*, but none deserves commendation; it is defended by a strong Castle, and hath a strong Wall on all sides, except on that which is seated on the River; and for its entrance hath three Gates: Its Port is six miles from the City, where the Ships are unladen, and the Commodities brought to the City by Land. The Inhabitants are either *Benjans*, *Bramans*, or *Mogolls*; but there are several other Nations which here reside, as *Persians*, *Turks*, *Arabians*, *Armenians*, *Jews*, &c. driving a Trade; but none comparable to the *English* or *Dutch*. Its other places of note are, 1. *Brodra*, seated on a sandy Plain upon

Mevat.

Udess.

Pitan.

Patna.

Guzurate, or Cambaya, exceeding rich and fertile.

Its Commodities and Trade.

Its Inhabitants

Pythagoreans.

Its extent by Sea.

Surat.

Brodra.

Baroch.

Cambaya.

Amadabad, the
Metropolis of
Guzaratt.The City of
Diu, its Trade
and Commo-
dities.Agra, a plea-
sant City, and
much fre-
quented by
the Mogoll.

a small River, well fortified with Walls and Forts, the Inhabitants being for the most part *Dyers*, *Weavers*, and other workers of *Cottons*, for which it is the chiefest place in the whole Province. The Governour of this City hath also under its Jurisdiction about 210 Towns and Villages. 2. *Baroch*, 12 Leagues from *Surat*, and 8 from the Sea, seated strongly on a Mountain with Walls of *Free-stone*; it is well Peopled, most following *Dying*, *Weaving*, and making of *Cottons*; as they do at *Brodra*. About this City are very fertile Fields, which bring forth *Wheat*, *Barly*, *Rice*, and *Cotton*, in great abundance; and out of the Mountains they find the *Agats*. 3. *Cambaya*, seated on a River, and on a Sandy place, encompassed with a Wall of *Free-stone* about 10 Leagues in circuit; its Streets are strait and broad, its Houses fair and large, having 12 Gates for entrance; 3 large Market-places, and 4 stately Cisterns; large enough to keep Water for the Inhabitants all the year long. They have also about this City 15 or 16 publick Gardens, for the recreation of the Inhabitants, being places of great pleasure and delight. The Inhabitants are for the most part *Pagans*, *Benjans*, or *Rasboutes*. This City is at the bottom of its Gulph, and so famous, and of so great Traffick, that the Kingdom sometimes bears its name, being frequented by most Nations, where the *English* and *Dutch* keep a Factory. 4. *Amadabad* is the Metropolis of *Guzarate*, being about 7 Leagues in compass; a place of good strength, the Buildings are very stately and fair, especially the *Mosques*, the Governours House, and other publick Places; the Streets are large and many; is very populous, and of a great Trade, abounding in divers *Indian* Commodities. It is seated on a small River, which falls into the *Indus* about 45 Leagues from *Surat*, and is by the *English* compared to *London*. Here the Merchants pay no Custom; the Governour of this City is Viceroy of all *Guzarate*, being answerable for what he doth to none, but the Great *Mogoll*; he liveth in a greater state than any King in *Europe*; his Court large and stately; his attendance great, not stirring abroad without great pomp and state, as in his attendance of Nobles, and others; in his Guards of Horse and Foot, in his *Elephants* with brave furniture, together with several playing on certain Instruments of Musick. His Revenue is exceeding great, which by some is accounted to be about Ten Millions of *Gold* yearly: out of which he is at great expences, as in the maintaining the charge of the Kingdom, his own expences, and the keeping 12000 Horse and 50 *Elephants*, for the *Mogolls* service. In and about this City there are great quantities of pleasant Gardens; plentifully stored with variety of *Fruit-trees*. 5. *Diu* is in an Island of the same name, and lieth about 20 Leagues from the River *Indus*, and not far distant from the main Land. It is now subject to the *Portugals*, who have strongly fortified it. This City is well built, indifferent big, and hath a great and good Haven; being a place of great Trade; and having a concourse of Merchants of divers Nations; by reason of which it brings a great profit to the King of *Portugal*; whose chief Commodities are *Cotton-Linnen* of sundry sorts, which we call *Callicoets*, *Cocos-Oil*, *Butter*, *Pitch*, *Tar*, *Sugar-Candy*, *Iron*; several sorts of curious *Desks*, *Chests*, *Boxes*, *Standishes*, which they make of Wood neatly carved, gilded, and variously coloured, and wrought with *Mother of Pearl*; also excellent fair *Leather*, which is artificially wrought with *Silks* of all colours, both with *flowers* and *figures*, which is there (and elsewhere) used instead of *Carpets* and *Coverlids*. 6. *Bisnagan*, by reason of the fertility of the Country there adjacent, is of good repute, well peopled, having in it about 20000 Houses. 7. *Chyeteponr*, is seated on a small River, the Inhabitants being *Benjans*, who by Profession are *Weavers*, who make great quantities of *Cotton-Linnen*. Here are also several other Cities of less note; as *Nassary*, *Gaudai*, and *Balsara*, which are under the jurisdiction of *Surat*, from which they are not far distant. 8. *Agra*, seated on the River *Gemini*, which falls into the *Ganges*, of a very large extent, and strongly fortified with a Wall and a great Ditch. Its Houses are fair, its Streets spacious; several being inhabited by those of one Trade, each Trade having its Street allotted it. It hath a fair Market-place, and hath for the accommodation of Merchants and Forreigners about 80 *Caravanserats* or *Inns*, which

which are large Houses, wherein are good Lodgings, and Ware-Houses for their Goods. In this City there are about 70 great *Mosques* or *Churches*, besides divers little ones; in the greatest of which are several *Tombs* of their *Saints*. Here are also a great quantity of *Baths* or *Hot-Houses*, which are much used amongst them.

The Great *Mogoll* doth often change his dwelling; so that there is scarce any City of note, but what he hath abode in, and where he hath not *Palaces*, but there is none which hath his presence so much as this, it being the most delightful of all others, where he hath a sumptuous *Palace*, as also several *Gardens* and *Houses* for his retirement without the City. His *Palace* is seated upon the River *Gemini*, and if some Authors may be credited, is about 2 Leagues in compass; it is very strong, being encompassed with a strong Wall, and a great Ditch, or Moat, having at every Gate a *Draw-bridge* which are strongly guarded. For the description of this *Palace*, I must be beholding to *J. Albert de Mandelso*, in his Book of *Travels*, where he saith, That being entred in at the Gate, there is a spacious Street with *Shops*, which leads to the *Mogolls Palace*; to which there is several Gates which are called by several names. Under the Gate called *Cisery*, is the place of *Judicature*, to which is adjoynd a place where all *Ordinances* and other *Writs* are sealed, and where the *Records* are kept: At the entrance of this Gate is the spacious Street aforesaid. The Gate called *Achobarke Derwage* is a place of great respect with them, and it is the place that the *Singing* and *Dancing Women* are lodged at, who are kept for the diversion of the great *Mogoll*, and his Family; these *Women* dance before him naked. There is another Gate which they call *Derfame* which leads to a River, to which he comes every morning to worship the *Sun* at his rising. Near this place it is, that his *Nobles* and *Officers* about his Court, come every day to do their submission to him; to which place he comes every day, except *Fridays* (which is set apart for their Devotions, as *Sunday* is with us) to see the fighting of *Lions*, *Elephants*, *Bulls*, and the like fierce *Beasts*, which are here used for his recreation. He speaketh of another Gate which leadeth into the *Guard-Hall*, through which, at the farther end of a Paved Court, under a *Portal*, there is a row of *Silver Pillars*, where there is a continual Guard also kept to hinder all people, except great *Lords*, to enter any farther, it leading to the *Mogolls Lodgings*, which are exceeding rich and magnificent; but above all is his *Throne*, which is made of massie *Gold*, and enriched with *Diamonds*, *Pearls*, and other precious *Stones*: Above the place where this *Throne* standeth, is a *Gallery* where he sheweth himself every day, and receiveth the complaints of those who have received any injury; but they must be sure to prove it, else he runs a great hazard of his life, to trouble him vainly. But in his inner Lodgings there is no person to enter, save the *Eunuchs*, who wait upon the *Ladies* in his *Seraglia*, which is about 1000. Among the several fair Structures which are within this great inclosure, there is one great *Tower*, rich without (being covered with *Gold*) but not to compare to the wealth within; in which are 8 spacious *Vaults*, which are filled with *Gold*, *Silver*, and *Precious Stones* of an Inestimable value.

This City of *Agra* gives name to a Province or Kingdom which is of a fertile Soyl, and well peopled and frequented, and owes its beauty and enlargement to *Ekebar*, Emperor of the *Mogolls*. The *Palace* of the Great *Mogoll*, as I said before, is of 2 Leagues circuit; the other *Palaces* of *Princes* and *Lords*, which are also seated along the River, stretching towards the North, are all proudly built, but not of so large an extent; that of the Great *Mogolls* being the fairest, richest, and most magnificent of all the *East*. On the other side is the City of *Secandra*, about 2 Leagues long, almost all inhabited by *Merchants*. *Fetipore*, that is, *Desire accomplished*, 12 Leagues from *Agra* and towards the West, is likewise one of the works of *Ekebar*, who having obtained Children to succeed his Estates, caused this place to be built for pleasure, with a very stately *Palace*, and *Musqueeto* or *Temple*; but its ill Waters have caused it to be abandoned. *Biana* to the West of *Fetipore*, hath the best Wood of all *India*. *Scanderbad* on the West of *Bayana*, hath been the Residence of some *Kings*, and the *Castle* above it is very advantageously situated, where *Xa Selim* kept himself, till such time as *Ekebar* had straightly besieged him, and forced him to retire into the Mountain.

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Province of La-
hor.

tains. The name of this place, and likewise this of *Secandra*, directly opposite to *Agra*, retain something of the name of *Alexander*.

The Province of *LA HOR* or *PENGAB*, is large, very fertile in all sorts of *Fruits* and *Grains*, which makes it considerable, its chief City bears the name of the Province; and I believe this City to be the same with *Alexandria Bucephalus*, which *Alexander* the Great built, and named of his name and that of his Horse *Bucephalus*. The Ancients place it by the River *Hydapes*, which may at present be *Bowey*. The City hath been so much enlarged by *Xa Selim*, that it contains 24 Leagues of circuit. It is very pleasantly seated, especially towards the River, on which it hath many delightful *Gardens*: Its *Fortress* is good, is adorned with many stately *Palaces* and great Houses where their *Nobles* and persons of quality reside; among others, that of the *Kings*, which is (though seated within the City,) yet separated from it with a high Wall, being magnificent, and adorned with great quantities of fair *Pictures*. Here is also by reason the *Inhabitants* are *Mahometans*, abundance of *Mosques* and *Bathing-places*, for their ordinary purifications, which is a ceremony much used amongst them. Here it is by many thought, that *Noah* seated himself after his coming out of the *Ark*; and likewise, that from hence *Ophir* and *Havilah*, Sons of *Jokan*, removed towards the *Ganges* and *Malacca*. This Province is esteemed one of the most pleasant Countreys in all *India*, being so well shaded with *Mulberry* and other *Trees*, whose verdure is no less delightful to the eye of the beholder, then refreshing to the wearied *Traveller*, under whose *Boughs* he may rest, and shade himself from the shallure of the *Sun*. At *Fetipore*; not far from *Labor*, the *Sultan Gansron*, the Son of *Selim*, but a Rebel, was by his Father defeated; from whence the place had its name, which signifies, *Desire accomplished*: As the other *Fetipore* near *Agra* was built by *Ekebar*, after having obtained Children to succeed him in his Estates. This Countrey bears the name of *Peng-ab*, that is, five Waters, by reason it is watered with five different Rivers.

Province of
Delly.

The Province of *DELLY* gives name to its capital City, which is on the Road from *Labor* to *Agra*; watered by the River *Gemini* or *Semena*. Before the *Mogolls* descended into all these quarters, the *Kings of India* made it their Residence, were here Crowned, and here had their *Tombs*: There are yet found some very fair *Obelisks*, believed to have been erected in the time of *Alexander* the Great, and the *Greeks*.

Kingdom of
Angala.

The Kingdom of *BENGALA* occupies all the lower part of the *Ganges*, and may be divided into three parts. *Prurup* on this side the *Ganges*, *Patan* beyond it. The particular name of *Bengala* may be given to that which lies between the Branches of the *Ganges*, and along the Coast. This Kingdom hath been divided into 12 Provinces, which have been so many Kingdoms, and which took their names from their principal Cities; but we have no certain knowledge either of their names, or situations. *Bengala* likewise is placed by some between the Branches of the *Ganges*, by others beyond it: Some esteem *Chatigan* its chief City, when as others will have it to be *Gourga* on the *Ganges*, higher in the Land, and more then 100 Leagues from the *Sea*. However it be, *Bengala* is of so great *Traffick*, and so rich, that the Kingdom and Gulf of *Ganges*, on which it is at present, is called the Kingdom and Gulf of *Bengala*. The City of *Ghatigan* is pleasantly seated on a fair and large River, whose imboure is not far distant from that of the *Ganges*. This River hath so fierce a Current, that *Boats* and *Vessels*, without the help of *Sails* or *Oars*, are driven in 24 hours about 100 Miles; so that those who have no occasion to pass up and down this River, are forced to fasten their *Vessels* to certain *Trees* or other things which are for the same purpose fixed along the shore. By which means they are sheltered from the violence of the *Tides*, which else would spoyl them. Here are several other Cities, as *Ragmehel*, *Daca*, *Banara*, *Tanda*, *Patina*, *Holobasse* on the joining of *Gemini* and *Ganges*, is one of the fairest and greatest Cities of *India*, and I esteem it in the place of the Ancient *Palibothra*, where the streams of the *Jomanes* and *Ganges* do meet, with other Cities of less note.

This

The extent of
Bengala.

This Kingdom of *Bengala* extends it self 300 Leagues from *East* to *West*, and sometimes 200 from *North* to *South*, having no less then 150 Leagues of Coast, which is much frequented by *Merchants* of several Countries, which higher come for their *Commodities*, which by reason of the temperateness of the *Air*, and the fertility of the *Country* do here abound. The *Inhabitants* are courteous, but deceivers: Their *Kings* have been esteemed as rich and as powerful as any in *India*.

Its Inhabitants.

Between the Kingdoms of *Cambaya* and *Bengala*, are those of *Candis*, *Chitor*, *Malway*, *Berar*, *Gualcor*, *Narvar*, *Ranas* and *Berar*. *Bramporé* is the chief City of *Candis*, seated on the River *Tapta*, which descends into the *Gulph* of *Cambaya*, below *Surat*. The City is great, but ill built, unhealthy, and a place which hath been unfortunate to many Children of the Great *Mogolls*. In the old City of *Mandow*, are the *Sepulchres* and *Remains* of the *Palace* of its Ancient *Kings*; the new City is better built, but less.

Province of
Candis.

The Province of *CHITOR*, with its City of the same name, is quite engaged in the Mountains, which meet in the way of *Amedebat* and *Cambaya* to *Agra*. The City was of 5 Leagues circuit, before *Ekebar* took it from *Raja Cana*, and ruined it. It hath now little more then the *Remains* of 100 and odd *Temples*; and of a great number of Buildings which have been stately and magnificent. The *Castle* was in a place so advantageous and strong, that the *Kings of Delli* could never take it; and *Sultan Alandin* was constrained to raise the siege, after having been 12 years before it.

Province of
Chitor.

The Province of *MALWAY*, hath its Territory fruitful, and for its principal place *Rantipore*, others put *Ugen* or *Ongell*. Its chief *Fortress* is *Narvar*, whose City is near the Spring-head of a *River*, and at the Foot of Mountains of the same name, and which stretch themselves from the Kingdom of *Guzurate*, unto that of *Agra* and *Narvar*; and in these Mountains abide some Princes which obey not the *Mogoll*.

Province of
Malway.

The Province of *GUALCOR* takes its name from its chief City, where there is one of the best *Citadels* or *Fortresses* of the Estate, wherein the *Mogoll* confines such as are Prisoners of *State*, and those *Lords* of which he hath any jealousy; and where he also keeps a great part of his *Treasure*.

Province of
Gualcor.

The Province of *RANAS*, hath for its chief place *Gurchitto*, seated on a high Hill.

Province of
Ranas.

The Province of *NARVAR*, hath for its chief City *Gebud*, seated on a *River* which falls into the *Ganges*, and touches on the Mountains of *Narvar*.

Province of
Narvar.

The Province of *BERAR*, hath for its capital place *Shapor*, which reaches Southward, and touches that of *Guzurate*, and the Mountain of *Rana*.

Province of
Berar.

In the midst of all the *Mogolls* Estates, are the provinces of *JENUPAR*, *HENDOWNES*, *JESSELMERE* and *BANDO*. The Province of *Jenupar*, takes its name from its chief City. *Hendowns* of *Hendowns*, which is towards the *Indies*. *Jesselmere*, whose chief City is so called, in whose *Castle Ammer* in 1548, *Zimlebege*, Wife of *Hymayon*, flying into *Persia* Lay in of *Ekebar*, who restored the *Mogolls*, and made their Estates so great and powerful in the *Indies*. And lastly, the Province of *Bando*, whose chief City bears the same name, is between the Cities of *Jesselmere*, *Delli* and *Agra*, at 70 or 80 Leagues from the one and the other, besides its City of the same name: *Asmere* is famous for the *Sepulchre* of *Hogimondee*, a *Mahometan*, whom the *Mogolls* esteem a *Saint*; and there where *Ekebar* made his devotions, to the end he might obtain a Son to succeed in his Estate; and afterwards caused to be set up at every Leagues end, a *Pillar* of *Stone*, and several Lodgings to be built on the way, to receive *Passengers* and *Pilgrims*.

Several other
Provinces.

These are the Provinces or Kingdoms which the Great *Mogoll* possesses; whose *Empire* stretches from *South* to *North* 500 Leagues, and from *West* to *East* 6 or 700, is bounded either with Mountains or the *Sea*. Its Neighbours are the *Casbeck*, the *Cascar*, the *Thibet*, and the *Turquestan*, parts of *Tartary* towards the *North*; the People of *Mang*, and others which have been of *Pegu*, towards the *East*; the *Persians* towards the *West*; and the Kingdom of *Dacan* and *Golconda* towards the *South*. The *Indian Ocean*, where are the *Gulfs*

The extent
bound; &c. of
the Great Mo-
golls Country

The *Tartars* & *Persians*, very troublesome to the *Mogoll*.

Petty Kings & people under the *Mogoll*.

Mogoll very potent.

The Country stored with Cattle, Fowls, and Fish.

The *Mogolls* guard.

of *Indus* and *Cambaya* on one side, and that of *Bengala* on the other side, wash the rest.

Of all his Neighbors, the *Tartars* and *Persians* are the most powerful: The *Tartars*, nevertheless, being divided into many Estates, where they border on him, are more likely to damage him by Inroads, than by open War. The *Persian* regained from him *Candabar*, some years past: which he lost not again, till he had at the same time to deal with the *Mogolls*, and *Turks*. The others have much ado to defend themselves against him; as the Kings of *Golconda* and *Decan*; this last having lost some part of his Estates, and the other giving him some present in the way of Tribute.

But the great *Mogoll* would make nothing to seize both these Kingdoms, if he were not often perplexed with intestine War; and if there remained not in his Estates divers *Princes*, which they call *Rahias* or *Kings*; and many people of whom he cannot absolutely dispose, neither the one nor the other obeying him, or paying any Tribute to him, but by constraint; and the greatest part paying it only when and how they please, and sometimes not at all. Amongst these little Kings and People are the *Rahia Bosson*, who resides at *Temery*, 50 Leagues from *Labor*. The *Rahia Tulluck Chan*, who resides at *Naugracut*, 50 Leagues from *Labor*. The *Rahia Decomperga* is 150 Leagues from *Agra*, residing at *Caltery*; the *Rahia Mansa* is 200 Leagues from *Agra*, residing at *Serimgar*. The *Rahia Rodorou* is beyond the *Ganges*, residing at *Camayo*. The *Muggi* likewise beyond the *Ganges* to the South of *Rahia Rodorou*, is very powerful as well as the two last; between the *Armes* of the *Ganger*, is a Prince of the ancient family of the Kings of *Dells*, who likewise maintains himself. Above *Cassimere* the *Rahia Tibbon* acknowledges neither *Mogoll*, nor *Tartar*; descending often, and making incursions both on the one and the other. The People called *Bullobes* or *Bulloques*, do unpunished live like Vagabonds in the Province of *Haiacan*; likewise the *Aguvanes*, and the *Patanes* in *Candabar*, likewise the *Quilles* or *Colles*, and the *Rebutes* in the Mountains between *Cambaya* and *Decan*, and sometimes the *Colles* of *Decan*, the *Rebutes* of *Cambaya*, and the *Patanes* of *Candabar* have raised Tribute.

These *Kings* and *People* are almost all *Pagans*, descending from divers *Kings* and *People* which possessed divers parts of the *Indies* before the *Mogolls*. There is one *Rahia* of the *Colles* above *Amadebat*; another the *Rahia Paratappa* near *Breampure*, who hath some time taken and pillaged *Cambaya*. The *Rahia Rana* resides at *Gorebitto*; and after having well defended himself against the ancient Kings of *India*, yields now some Tribute to the *Mogoll*.

Yet is the Great *Mogoll* one of the greatest, and most powerful *Princes* of *Asia*; he can bring into the field 200000 Horse, 500000 Foot, and 2 or 3000 *Elephants*; he gives pensions to the greatest part of the *Princes*, *Lords*, *Nobles* and *Gentry* of the Country, on condition that they keep for his service, some 1, some 2, 3, 4, 5, some 10, some 100, some 1000 and upwards of Horses, which are to be always in readiness; his Armies nevertheless consist for the most part of 100000 Horse, and 200000 Foot; and this besides his ordinary Garrisons. His Subjects are strong and robustious, use all sorts of *Armes*, go freely to all occasions, wanting nothing but Order and Policy. They have no considerable Forces at Sea, since the *Portugalls* hold from them in the Kingdom of *Cambaya*, the City and Fortress of *Diu*, *Daman*, *Basaim* of the Isle of *Saltette* near *Benjamin*, the Fort of *Manora*, and the Rock of *Aserim*.

The whole Country is stored with several sorts of tame and wild Creatures, as *Buffes*, *Oxen*, *Cowes*, *Sheep*, *Deer*, *Wild-Ases*, *Bores*, *Hares*, &c. Variety of *Fowls* and *Fish*; here are also found *Crocodiles*, some of which are 30 foot long; *Cormorants*, and *Bats* as big as *Crows*.

The great *Mogolls* ordinary Guard consists of about 12000 men, besides 600 of his life guard; he never stirs abroad to hunt, take the Air or the like, without the attendance of about 10000 men of all degrees; besides to make his state the greater, there are 100 *Elephants* richly trapt, and covered with *Scarlet*, *Velvet*, or the like; on these *Elephants* there are seated two men, the one to guide him, and the other which supports a large *Banner* of *Silk*, richly embroydered

His State and great attendance.

broydered with *Gold* and *Silver*; but on some of the *Elephants* which go foremost, instead of carrying *Banners*, they play upon *Simbretts*, and other such like *Instruments*; after these 100 *Elephants*, comes the *Mogoll*, either mounted on an excellent *Persian* Horse, or else in a *Coach*, or *Sedan*, attended by his *Nobles* and other *Courtiers*, after whom come about 500 *Elephants*, *Camels*, and *Wagons* which are to carry the *Baggage*; for commonly he encamps in the *Field*, in which he takes great delight by reason of the coolness, as also by reason few Cities are able to give entertainment to so great a retinue; and besides his going thus to hunt or take the Air, he often changes the place of his abode according to the seasons of the year. The *Mogoll* celebrates with great pomp and state the first day of the year. They have several *Festival daies* which they keep in great triumph, wherein they have several divertisements of sports and recreations, and especially the birth day of the *Mogoll*. The language which the Great *Mogoll*, and most people of quality speak, is the *Persian* tongue. The Inhabitants are very expert at the Bow. The diseases which are common amongst them, are *Fevers*, and the *Bloody Flux*. Their Horses are not good, but their *Oxen* are excellent, being here used instead of *Horses*, which are very mettlesome. As in this great extent of ground (which we call the *Mogolls* Country) there are several sorts of People, so likewise are there divers sorts of *Religions*, some of which I shall speak a word or two of.

The *Benjans* are *Pagans*, they use neither *Circumcision* nor *Baptisme*; they believe there is a God who created them, and made the Universe; but they worship the *Devil*, believing that God created him to govern the world, and do mischief to mankind, to which end in all their *Mosques* they have the figure of him in Statues of *Gold*, *Silver*, *Ebony*, *Ivory*, *Marble*, *Stone* and *Wood*; this figure in shape is ugly and horrid to look on; it is placed on a Table of Stone, which serves for an *Altar*, and receives the Offerings which are made to the *Pagode*; on the right side of this Table is placed a Trough, in which those who intend to do their devotions wash and Purifie themselves; and on the other side there is a Chest in which is put their Offerings, high to which in the wall is a Vessel, out of which the *Braman* or *Priest* takes out a kind of yellow stuff, with which he marks the foreheads of them; this *Braman* sits at the foot of the *Altar*, from whence he riseth often to say Prayers. In their *Mosques* they always burn Lamps, and about the Walls of them are abundance of Figures; as *Beasts*, *Devils*, &c. which they adore. They much use as a part of their Religion corporal purification, bathing themselves every day. They are very ingenious, subtil, and civil, there being no trade but what they apply themselves unto, and are very expert in the adulteration of all *Commodities*. They are civil in their *Apparel*, but their *Children* go naked untill the age of 5 or 6 years, and at 7, 8, 9 or 10 years of age they marry them, seldom staying untill the age of 12, especially the female sex, as thinking it a great shame to live so long unmarried; and in their marriages they observe several ceremonies. The Men are not only permitted to marry twice, or thrice in case of mortality, but also if their *Wives* prove barren; but the first hath a preeminence as being mother of the Family; their Sons are Heirs to their Fathers Estates, but withall they must maintain the Mother, and take to Wife their Sisters.

The *Bramans* or *Priests* are of great authority, and highly respected amongst them, inasmuch that the *Benjans* will hardly engage themselves in any matter of concernment, without the advice and approbation of them. These *Priests* besides their expounding the mysteries of their Religion according to their fancies (which soon take impression in the minds of these superstitious people), have an oversight of Schools where Children have their education. When the men are to go a journey they desire the *Braman* to have a care of their *Wives*, untill they return, and to supply their places; another custom they have, that when any are married, the Bride is brought to the *Braman*, and he is earnestly requested to enjoy the first fruits of her, without which they think the marriage is not blest, and for so doing he hath gifts presented him according to the qualities of the persons.

The *Benjans* believe the transmigration and immortality of the Soul, thinking that

that the Soul of a good man is departed into the body of a *Chicken* or a *Pigeon*; that of a wicked or cruel man into a *Lion*, *Tiger* or *Crocodile*, that of a glutton into a *Swine*, that of a crafty man into a *Fox*, &c. for which reason they neither eat nor kill any thing that hath life; nay they are so far from destroying them, that on the contrary they will purchase them of the *Mahometans*, and set them at liberty, and for those that be lame, or sick, they have Hospitals for them as in *Persia*.

J. Albert de Mandelsto, in his Book of Travels saith, that the *Benjans* are divided among themselves, into 83 principal Sects, besides an infinite number of others; those of most note as comprehending all the others, are those of *Sumarath*, *Ceurawath*, *Bisnow* and *Goeghy*.

The *Pariss* and
their Religion.

Besides the *Benjans* there is another sort of *Pagans* whom they call the *Pariss*, who for the most part reside by the Sea-coast, addicting themselves to *Trades* and *Commerce*; they believe that there is one God, preserver of the Universe, who acts alone and immediately in all things; but he hath as they fancy about 30 several Servants, to whom he giveth an absolute power over the things which he hath entrusted them with, but withall they are obliged to give an account unto him; and for these Servants they have a great veneration, who have each their particular charge, as one having the Government of the *Earth*, another of *Fruits*, another of *Beasts*, another of Military affairs: Others who have influences on men, some giving understanding, others wealth, &c. Another who takes the possession of the *Souls* departed; which conducts them to the *Judges* where they are examined, and according to their good or evil deeds, receive their *Sentence*, and are carried by the good or bad *Angels*, who attend the *Judges* to *Paradise* or *Hell*, where they think they shall abide until the end of the world, which will be 1000 years; after which time, they shall enter into other Bodies, and lead a better life than they did before. Another hath the government of *Waters*, another of *Metals*, another of *Fire*, which they hold *Sacred*, &c.

They have no *Mosques* or publick places for their *Devotion*; they have a very great esteem of their *Teachers* and *Doctors*, allowing them a plentiful Estate. Their Widows are suffered to marry a second time. *Adultery* and *Fornication* they severely punish. They are forbidden the eating of any thing that hath life. *Drunkennes* they likewise strictly punish. These People are much given to *Avarice*, and circumventing those they deal withal. The *Mahometans* or *Mogolls* that here inhabit are of a good stature, have their Hair black and flabby, but are of a clearer Complexion than the other sort of People aforementioned. They habit themselves something like the *Persians*; their *Garments* about their *Waists* are close to their *Bodies*, but downwards wide; they use *Girdles* and their *Shoes* and the Covering of their *Head*, is much the same with those of the *Turks*. And they are likewise distinguished by their *Glothes*, which according to the degree and quality, and the person, doth exceed in richness. They are very civil, ingenious, and reserved, yet are expensive in their *Apparel*, *Feastings*, and great lovers of *Women*. And so much for the *Mogolls* Countrey.

Their habit &
behaviour.

The Peninsula of INDIA without the Ganges.

Its bounds.

The Peninsula without the *Ganges*, is between the Mouths of *Indus* and *Ganges*, and advances from the East of the Great *Mogoll*, unto the eighth degree of *Latitude*, on this side the *Aequator*. The Ocean or Indian Sea washes it on three sides; to wit, the Gulf of *Bengala*, once *Gangeticus Sinus*, on the East; the Gulf of *Cambaya*, anciently *Barthazenus Sinus*, and the Sea which regards *Arabia*, on the West; towards the South; that which regards *Ceylan* on one side, and the *Maldives* on the other.

We

We will divide this Peninsula into four principal parts, which shall be *Decan*, *Golconda*, *Narsingue* or *Bisnagar*, and *Malabar*. The three first, and the greatest, have each their King; or if there be more, they depend and hold of one alone: The fourth and last part, hath likewise formerly been a Kingdom alone; at present is many, but which hold one of another.

D E C A N.

The Kingdom of *DECAN* is washed on the West, by the Indian Ocean, the Gulf of *Cambaya*. It is divided into three others, which they call *Decan*, *Cunkan* and *Balaguat*; the two first on the Coast. *Balaguat* is Eastward of the other two up in the Land, and composed of *Vallies* which are below, and between the Mountains of *Gate*; beyond which, are the Kingdoms of *Golconda* and *Narsingue* or *Bisnagar*.

Kingdom of
Decan.

In the particular *Decan*, are the Cities of *Amedanagar*, *Chaul*, *Dabul*, &c. In *Cunkan* are the Cities of *Visapor*, *Soliapor*, *Goa*, *Paranda*, *Pagode*, &c. Likewise in *Balaguat*, *Lispor*, *Beder*, *Dolatabad*, *Hamedanagar*, *Visapor* and *Beder*; are the principal Cities, and those where the *Dealcen* or *Idalcen* makes his residence; but none more considerable than *Goa*, though they are fair, well built, large, and populous.

Its chief places

Goa is a City as fair, rich, and of as great Traffick as any in the East; being situated in an Island of the same name, which the Rivers of *Mandova* and *Guari* make at their falling into the sea. *Alphonso Albuquerque* took it in the year 1510. and since the *Portugals* have established themselves so powerfully, that their *Vice-Roy*, a *Bishop*, and their *Council* for the *East-Indies* have here their Residence. The *Commodities* found in this City (being the Staple of the *Commodities* of this part of the *Indies*, as also of *Persia*, *Arabia*, *China*, *Armenia*, &c.) are *Precious Stones*, *Gold*, *Silver*, *Pearls*, *Silk* raw and wrought, *Cotton*, of which they make several *Manufactures*; also *Spices*, *Druggs*, *Fruits*, *Corn*, *Iron*, *Steel*, with divers others which the said Countreys afford, but the *Natural Commodities* of *Goa* are not considerable. Besides their great Traffick with several Nations, their *Riches* and *Policy* which they observe, *Vincent Blanc* makes account that its *Hospital* is the fairest, the best accommodated and served, and the richest of any, making it exceed that of the *Holy Spirit* at *Rome*, and the *Infermeria* at *Malta*, which are the best of all *Christendom*. Their *Streets* large, their *Houses* fair, especially their *Palaces* and *Public Buildings* which are very magnificent: Their *Churches* are stately and richly adorned; their *Windows* are beautified with *Mother of Pearl*, and *Shells* of *Tortoises* of divers colours; which are ingeniously cut in neat Works. This City is in compass above 15 miles, and though it is without *Gates* or *Walls*, yet by reason of its *Castle*, *Forts*, and the strength it receiveth from the Island, is a place of great strength and force: It hath a great and good *Harbor*, which they make their *Harbor* for their *Indian Fleet*, by which they command the *Seas* thereabouts. The *Portugals* here live in all manner of delight and pleasure; and with a pride and presumption so great, that the least and most beggerly among them, take to themselves the titles of *Gentlemen* of the House and Chamber of the King, *Knights*, *Esquires*, &c. being very highly conceited of themselves, and exceeding proud and stately, but withal very civil and courteous; no person of quality walks the *Streets* a-foot, but are carried by their *Slaves* in a *Palanquin*, or ride on *Horses*, and the Women seldom go abroad publickly. Both Sexes are extremely given to *Venery*, by reason of which, the *Pox* is very frequent among them, of which abundance dies: Their Women have an excessive love to white Men, and will use their uttermost endeavours to enjoy them. The Men are so jealous of their Wives, that they will scarce suffer their nearest Relations to see them, by reason they are so much desirous of the enjoyment of Men, and they so much of them.

Its riches beauti-
fy, &c.

Its strength

In their *Apparel*, as also in the furniture of their *Houses*, they are very costly. The Women are here delivered without pain, and not having the use

of

of a *Midwife*, or any one but herself; and no sooner is she delivered, but she is about her occasions, not observing the custom among us, in keeping their Chamber a month together. Most of them live to the age of 100 years, and that in perfect health; but these are not the *Portugals*; but are the Natives which are *Pagans* and *Benjans*. To this City do resort *Merchants* from *Arabia*, *Persia*, *Armenia*, *Gambaya*, *Bengala*, *Siam*, *Pegu*, *China*, *Java*, *Malacca*, and from several other Countries, it being the *Staple* of all *Indian Commodities*. In the heart of the City, is a *Street*, where every morning, from seven to nine, not only the *Merchants* meet for the vending and buying of *Commodities*, which are here set forth for sale, like our *Fairs*; but also the *Gentry* of the City meet, as well to hear news, as to satisfy their fancies in the sight of the *Commodities*: And besides this *Street*, every *Trade* hath its particular *Street*, one *Trade* not intermixing with another.

Besides *Goa*, the Land of the *Bardes*, the *Isles* of *Salfette*, of *Coran*, of *Divar*, and some other Lands about *Goa*, are the *Portugals*: As likewise, the City of *Chaul*, on the Coast, where they have a great *Trade* of *Silk*; and from these places they have their provision brought them, and that at very easie rates; for the *Island* of it self is so barren, that it will scarce produce any thing.

Decan taken altogether, hath one King alone, which they call *Idolcan* or *Dialcan*. The Great *Mogoll* hath taken from him some places in the particular *Decan*, and the *Portugals* *Goa*, *Chaul*, and some other places on the Coast. This Prince is yet powerful, at least in regard of the *Indians*: He hath taken *Dabul* from the *Portugals*, and ruined it. He once besieged *Chaul*, and divers times *Goa*, leading in his Armies near 200000 men. In fine, he made Peace with the *Portugals*; the *Vice-Roy* of the *East-Indies* for the Crown of *Portugal*, having always an *Ambassador* at the *Idolcan* Court, and the *Idolcan* having one at *Goa* with the *Vice-Roy*. And though this Prince is so powerful in men, and so well provided with *Ammunition*, and his *Artillery* greater and better then any Prince about him, yet is he become Tributary to the Great *Mogoll*.

Its Commodities]

All the Country is good, fruitful, watered with several Rivers, hath store of precious *Stones*, of *Gotton* and *Silk*, of which they make divers *Manufactures*; of *Pepper*, of *Fruits* and other *Commodities*.

The Inhabitants or Natives of the Country are *Pagans*, and for the most part *Benjans*, but eat any kind of *Flesh*, except that of an *Ox*, *Cow*, *Buffe*, *Swine* or *Wild-Bore*. A *Swine* they abhor, but have a great veneration for a *Cow* or an *Ox*. But as to the manner of their life, as in their *Marriages*, *Interments*, *Purifications*, and other *Ceremonies* in their *Religion*; as also in their *Habits* and *Houses*, which are very mean, their *Houses* being made of *Straw*, and withal, small and low; having no light but what enters in at the door, which is not so high as a mans *Waist*. In which, their chiefest furniture and household-stuffs, are *Mats* to lie upon in the night, on which they also eat their *Meat*; their *Dishes*, *Drinking-cups*, &c. are made of *Fig-leaves*, which they daub and plaister together. In these, and the like *Ceremonies* and *Customs*, they imitate the *Benjans* aforementioned. The rest of the people which here inhabit, are *Mahometans* and *Jews*, which here enjoy the freedom of their *Religion*, but the Subjects of the King of *Portugal* are *Catholics*, those of the *English* *Protestants*.

GOL

G O L C O N D A.

The name of *GOLCONDA* hath been known but for few years; nevertheless this is a powerful and rich Kingdom; but which hath been confounded with the name of *Orisa*. It is upon the Gulph of *Bengala*, which it regards towards the East and South, neighbouring on the *Mogolls* and the Kingdom of *Bengala*, towards the North. It stretches 200 Leagues on the Coast in length, and near 100 up in the Land in breadth. It yields 20 Millions of yearly Revenue, is very well peopled, and its People addicted to all sorts of *Manufactures*. They make *Cotton Pintado's* so artificially, and with such lively colours, that it is esteemed better than *Silk*. They build great Ships, trade to *Mecca*, *Aquem*, *Bengala*, *Pegu*, and throughout all the *Indies*.

There are in this Estate 66 *Castles* and *Fortresses*, where the ordinary *Garrisons* are kept; and these *Castles* are on inaccessible Rocks, which they call *Conda*. *Golconda*, which the *Persians* call *Hidrabrand*, is the chief and residence of the King; it is distant from the Port of *Musulipatan* about 60 Leagues, which is a fair City seated on an Arm of the Sea; adjoining to the Kingdom of *Bisnagar*, and not far from *Cape Guadavari*. Hath its Air pleasant, its Soil fruitful, of about 5 or 6 Leagues circuit; nor doth its King yield much to the Great *Mogoll* in Riches, precious *Stones*, in store of *Elephants*, or all sorts of magnificence. But his Estates being much less, and his People less warlike, constraineth him to send him every year 400000 *Pagodes* in form of Tribute.

This Country moreover hath no Mines of *Gold*, *Silver*, or *Copper*, some hath of *Iron* and *Steel*, but many of *Diamonds* and other precious *Stones*, so rich and abundant, that in 1622 the King caused it to be shut up, and the labour to cease, fearing lest the too great quantity should make them neglected. Others say, for fear it should draw the Great *Mogoll* into his Estates.

Condapoli; its chief *Fortress* is so great, that in circumference it contains six others; and these six are one above the other, each having *Wood*, *Fruit*, and Land sufficient to maintain the *Garrisons* destined for their defence, which amount to 12000 Men. *Candavara* is another *Fortress*, 15 or 16 Leagues from *Condapoli*; and thence at certain intervals there are *Towers*, on which with certain Lights they give signal of all that passes in the Country. On the Sea-Coast or Gulph of *Bengala*, are seated several Towns, some of which are well known by Merchants; as *Guadavari*, which gives name to a Cape, on which it is seated, *Vixapatan*, *Narsingapatan*, *Pulacate*, *Palhor*, *Manicapatan*, *Calecote*, *Caregara*; on the Cape *Segogora*, or *Das Palmas*, *Polarin*, *Contirapatan*, and others. The *Portugals* have a *Fortress* at *Musulipatan*, which is one of the best Ports of the Country; the City is not walled, and belongs to the Prince.

The Air is every where healthful, the Soil fertile, producing twice or thrice a year *Grains*, *Fruits*, &c. almost all different from ours. Their Seasons are distinguished in three manners; they have very great heats in *March*, *April*, *May*, and *June*; and that is their Summer. Much Rain in *July*, *August*, *September*, and *October*; and that is their Autumn. Fresh Weather, or little heat in *November*, *December*, *January*, and *February*, which is their Spring: For Winter they have none. One of their principal Revenues comes from *Salt*, which alone yields 1800000 *Pagodes*, or so many Crowns. Their other Revenues are drawn from several *Commodities*; amongst the rest *Diamonds*, of which all above 5 *Carats* belong to the Prince; nor dare any keep them on pain of death.

The Kingdom of Golconda; its bounds and extent:

Its chief places or Fortresses.

The Country rich in Diamonds, and Precious Stones.

The Air and fertility of the Country.

N n

BIS.

BISNAGAR, or NARSINGUE.

The Estates
of Bisnagar
and its Parts.

South of *Decan* and *Golconda* are the Estates of *BISNAGAR* otherwise *NARSINGUE*; these two places being the principal ones of the Realm. *Narsingue*, not far from the Port of *Paleacate*, about the midst of the Coast of *Choromandel*: *Bisnagar*, towards the Mountains of *Gate*, and near *Canara*. The whole Estate is divided into three principal quarters, and these 3 quarters into 7 Kingdoms, and extends it self on two different parts of the *Indian Sea*, on the Gulph of *Ganges* or *Bengala*, towards the East; and on the Gulph of *Indus* or *Cambaya*, towards the West. On this side, the Coast is 65 Leagues long; in the other 250.

The three principal quarters are called *CANARA*, *BISNAGAR*, and *CHOROMANDEL*. *Canara* occupies all the Western Coast, between the Estates of *Decan* and *Malabar*; *Bisnagar* and *Choromandel* hold all the Eastern Coast: the last towards the Coast of the *Peschery*, and Isle of *Ceylan*; and the first towards *Golconda*. *Canara* hath the Kingdoms of *Onor* and *Baticala* on the Sea, and that of *Borsopa* farther in the Land, which stretches to the Mountains of *Gate*. *Bisnagar* hath the Kingdoms of *Tienlique* and *Bisnagar*; *Choromandel*, those of *Choromandel* and *Tamul*.

The chief Cities
and Forts.

Onor, *Baticala*, and *Gorcopa*, are the capital Cities each of their Kingdoms; the two first to one, the last subject to a particular King; but all Tributaries to *Bisnagar*. Those four on the East and Gulph of *Bengala*, are immediately subject to the King of *Bisnagar*, except that the *Portugals* hold *Maliapur* and *Nagapatan*. But moreover the Estates of the *Naiques*, of *Tanjaor*, of *Gingi*, and of *Madure*, are esteemed to be of *Bisnagar*, because they make part of it, and are likewise at present Vassals and Tributaries of the King of *Bisnagar*. Formerly these *Naiques* were only Governours of the Quarters they at present possess, these Governours revolting, and each seizing his Government. The Kings of *Bisnagar* having long made War upon them, to reduce them to their duty: They in the end remained *Naiques*, that is, *Hereditary Lords*, and absolute over those Quarters, paying some Tribute to the Kings of *Bisnagar*.

The City of *Gingi* is esteemed one of the greatest and fairest of *India*, in the midst of which is a Fortress, and in that Fortress a Rock almost inaccessible; they give likewise to this *Naique* the City of *Cindambaram*, after it *Christapatama*; and on the Coast of *Choromandel*, *Coloran*, the Princes of *Trinidi* and *Sahavasca*, are subject to him.

The *Naique* of *Tanjaor* hath his Estate between those of *Gingi* and *Madure*, and near the Port of *Nagapatan*, which belongs to the *Portugals*. Besides *Tanjaor* and *Cassan* in the Upland, the Cities of *Triminapatan*, of *Trangabar*, and of *Triminavesa*, belong unto him.

The *Naique* of *Madure*, besides *Madure* his capital City and a very fair one, holds almost all the Coast of the *Peschery*, and the little Isle of *Manar* near *Ceylan*. This Coast extends from the Cape of *Comori* unto the Cape of *Nagapatan*, viewing in the Ocean the not far distant Isle of *Ceylan*: And the name of the *Peschery* hath been given it, by reason of the *Pearls* which they yearly fish there for about the end of *March* and the beginning of *April*; and this Fishing endures only 15 or 21 days, there being then about 50 or 60000 Persons employed either to fish, or to keep the Fishermen's Vessels from trouble. These *Pearls* are exposed to sale in *July*, *August*, and *September*. *Tutucori* and *Manancor*, are the best Cities of this Coast, which is of 75 Leagues length, where there is about 25 Cities. The people of *Paravas* are mixed along the Coast, and live in some form of a Republick, paying some rights to the *Naique* of *Madure*; and these are, they that fish for the *Pearls*: this fishing being all the riches of the Country, which of it self is neither fertile nor pleasant, but dry and scorched.

Yet is the King of *Bisnagar* very powerful, formerly marching against the *Idalcan*, it hath been accounted that he had in his Army 40000 Horse, 700000 Foot, and 700 Elephants. His chief City is *Bisnagar* or *Visnagar*, a City very beautiful, seated in a temperate Air, and by reason of the fertility of the Country

The King of
Bisnagar very
powerful.

Country about it, which brings forth sundry Commodities naturally, besides the industry and ingenuity of the Inhabitants in several Manufactures; but especially in their fine *Cotton-Linnen*, which they make of divers colours, and interwoven with several sorts of *Loom-works* and *flowers*, which are esteemed better than *Silk*. Also the goodness of its Haven, hath made it a place of as great Commerce as any City on the Coast of *Choromandel*; though at *Musulipatan* the *Englisb* have settled a Factory (both for the providing and lading hence the Commodities of the Country,) more by reason of its situation, than for the goodness of place; it being of no beauty nor grandure; its Houses being low and ill built, and its Streets not many, and those that are, narrow and ill contrived; but above all it is seated in a barren Soil, by reason of the extraordinary Heat, which here rages from *March* to *July*; then from *July* to *November*, the great Rains and Winds, which reign continually, so that their Temperate weather is but from *November* to *March*.

An English
Factory at
Musulipatan.

Vincent le Blanc saith, That the City of *Bisnagar* is able to set forth 100000 Horse; next to it *Narsingue*, on the side of a little Hill towards the Sea; *Tripiyy*, not far from *Ghandegry*; and *Cangevaran*, not far from *Maliapor*, or *St. Thomas Trivulur*, is famous for the great number of its Idols. *Cirangapatan* is between *Chandegry* and *Mangalor*, which is on the Coast of *Canara*: the Forts of *Vellur*, between *Chandegry* and *Narsingue*, was the Kings Court in 1609. All the Country is healthful, rich, and fertile in *Corn* and *Fruits*, breeding store of *Cattel* and *Fowl*; and *Diamonds* are found in the Mountains of *Gate*, near *Chandegry*, and in other places quantity of *Amethysts* and *white Saphirs*. They have all sorts of *Beasts*, both tame and wild: their *Elephants* are docile, their People healthful and well disposed, but not courageous. The *Pepper* of *Onor* is esteemed the most weighty and the best of all these quarters: the *Portugals* lade from thence 7 or 8000 *Quintals* a year. *Baticala*, a Port of *Rice* of several sorts, different both in price and goodness; the *black Rice* is esteemed more healthful, and better than the *white*.

The fertility,
temperatures,
&c. of the
Country.

Between *Peleagate* and *Narsingue*, there is an obscure and deep Valley full of Trees, which still drop water like those in the Isle of *Ferr* in the *Canaries*: near this Valley there is abundance of *Sugars*, whose *Canes* prest serve to feed *Beasts*, among which *Hogs* most delight in them, which makes them contract a favour rather of *Sugar* than *Salt*; yet are they worth little.

Some give the King of *Narsingue* but 10 or 1200 *l. Sterling* of yearly Revenue, whereas others report him to have 10 or 12 Millions of *Gold* yearly, which is most likely. He entertains ordinarily 40000 *Naires*, 20000 *Horses*; and for the service of his House 12 or 15000 Persons, 1000 *Horses*, and 800 *Elephants*.

The Revenue
of the King.

Almost all the People are *Idolaters*, some *Mahometans*, and a few *Catholics*. The *Jesuites* have two residences; one at *Chandegry*, and the other at *Vellur*, to no small benefit. Amongst the Customs of these *Barbarians*, they have the inhuman custom for the Women to burn themselves with the Corps of their deceased Husbands. *Texera* saith, that the *Naique* of *Madure* deceasing in his time, his 400 *Wives* and *Concubines* cast themselves into the same Fire, and burnt themselves with the Kings Body. There was 375 burnt with the *Naique* of *Tanjaor*, in the year 1600, and as many or more with the last *Naique* of *Gingi*.

Its People.

As for the form and custom observed in the burning of these silly wretches, I shall borrow from Sir *Tho. Herbert*, as he hath it in his book of *Travels*, p. 362. where he saith, that the *Husband* being dead the *Wife* prepares her self for her Funeral, habiting her self in transparent *Lawn*; her Nose, Ears; and Fingers she adorns with *Precious Stones*, &c. but her Legs, Thighs and Arms she fettereth with Chains, which they hold as expressions of Love; in one hand she holds a Ball, and in the other a Nosegay of Flowers, both as Emblems of *Paradise*: and being thus habited, she is accompanied to the place by all her Relations, Friends, and Acquaintance; and all the way going the *Branchman* or *Priest* denotes the joys she is to possess, together with the assurance of enjoying her Husband in the *Elysium*: which words do much excite her to valour; so that when she cometh to the place, seeth the flames,

Here the Women
burn themselves
with the
Corps of their
deceased
Husbands.

N n z and

and the Carcass of her dead Husband, whom she longeth to be with in *Elysium*, being as it were like a hot-headed Lover, transported with joy, she takes leave of her Friends and Relations, and jumps into the flame, in which the Corps of her Husband was first put, which soon unites in Ashes; during which time they have several sorts of Musick: and to make the Ceremony the better, their *Branchman* exhorts them not to quit their Husbands, calling store of *sweet Wood and Oil* into the fire, to take away the unfavoury smell; and this Law was made, because the Women did frequently poison their Husbands upon any discontent, and so took others: but as *Linscot* says, this is only a Custom for their Nobles and Priests; it being prohibited to the meaner People. A Custom, I think, not greatly to be desired by any; and besides this *Heathenish* Custom, they have several others as bad and Idolatrous, *Satan* having here displayed his Banner of Impiety, being a People for the most part averse to Law and Morality. Likewise the Custom which they observe in their Marriages is as strange; for the *Branchman*, with a *Cow* and the *Man* and *Woman*, go together to the Water-side, where the Priest (after he hath muttered a short Prayer) joyns their hands to the *Cow's* Tail, and having poured upon them hallowed *Oil*, he forceth the *Cow* into the River, where she continueth a good while, and being come out they marry them; and this they hold for a solemn Marriage, and sacred for ever, the *Cow* being a creature which by them is highly esteemed and revered.

Among the places which are on the Coast of *Choromandel*, *Negapatan*, and *Maliapur*, belong to the *Portugals*, and formerly they alone of the *Europeans* had all the Traffick; now the *Hollanders* hold *Guedria*, the *English* the Fort *St. George*, called by the *Indians* *Sadrapatan*, and both have their Factors throughout the Coast. *Megapatan* is great of Trade, though seated in an unhealthy Climate, uttering many valuable Merchandizes: They gather *Rice* in quantity sufficient to serve their Neighbours. *Maliapur* a small, but well known Town on this Coast, is the place where those of the Country believe that *St. Thomas* was Martyred and interr'd; and there were many *Christians* who called it *St. Thomas*, when the *Portugals* entered the *Indies*; they are still a considerable body, and may easily be made return to true *Christianity*. The old City is ruined, the new was rebuilt by the *Portugals*, where there is a Chapel dedicated to *St. Thomas*; and it is erected into a *Bishoprick* under the Archbishop of *Goa*.

M A L A B A R.

M A L A B A R is the last of the four parts we have proposed in the *Penninsula of Indus* without the *Ganges*; the least in Continent, but not in goodness. All the Country is healthful, fruitful, and rich: It hath little *Wheat*, but instead of it, it hath great plenty of *Rice*, *Mays*, and other *Grains*, *Fruits*, quantity of *Drugs* and *Spices*, *Precious Stones*, *Silk*, *Ginger*, *Cassia*, and abundance of all sorts of *Beasts*, yields *Wood*, and such fair Trees for the *Masts* of great *Ships*, that *Norway* boasts not better; yet its greatest Riches consists in its *Pepper* and *Precious Stones*.

Some extend *Malabar* from the River of *Aliga*, or from the Cape of *Ramos* unto that of *Comorin*; but all that is between the River of *Aliga* and *Cangerecora*, having already passed under the name of *Canara*, where the Kings are Tributaries to him of *Bisnagar*; we will follow the others, who limit *Malabar* between the River of *Cangerecora* and the Cape of *Comorin*; where there are many Kings, all once subject to the *Samorin* of *Calicut*: At present those of *Calicut*, *Cochin*, *Cananor*, and *Coulan*, are the most powerful.

The Coast of *M A L A B A R* is about 125 Leagues in length, and is divided into several Kingdoms, of which the King of *Cananor* holds 20 Leagues, he of *Calicut* 25, he of *Cochin* 15, and he of *Coulan* with *Travancor*, 40 and odd; the rest is possessed by many. Those of *Chambais*, *Montigue*, and *Badara*, are very near one another, and between *Cananor* and *Calicut*: Those of *Tanor* and *Cranganor*, are between *Calicut* and *Cochin*: Those of *Porca* and

The Coast of
Choromandel,
and its Trade.

Malabar, its
fertility, com-
modities, &c.

Its Limits.

The Coast of
Malabar, and
its Parts or
Kingdoms.

and *Calecoulan* are between *Cochin* and *Coulan*; and he of *Travancor*, between *Coulan* and *Cape Comorin*, near which the Country is not so good as the rest of *Malabar*.

In the High-lands are those of *Cota* near *Cananor*, of *Auriola*, of *Cottagan*, of *Bipur*, of *Cocuran*, of *Panur*, and of *Curiga*; above *Calicut*, *Tanur* and *Cranganor*; Those of *Moterte*, of *Marta*, and *Ratimena*, towards *Cochin*: In the Mountains are those of *Mangatt*, of *Paru*, of *Pimienta*, of *Changanasta*, of *Trivolar*, of *Panapella*, of *Angamale* (where there was an Archbishop of *Christians* of *St. Thomas*, reduced to a *Bishoprick*), and transferred to *Cranganor*: Two of the *Tionnutes*, of *Punkali*, of *Caraharetto*, and others. The people called *Maledus*, and those of the Mountains *Pande* live in the form of a Republick: *Corate*, near *Cape de Comorin*, is of the Kingdom of *Travancor*, and hath good trading, *Calicut* is esteemed able to bring more than 180000 men into the Field: *Cananor* few less, *Cochin* and *Coulan* each 50000. They use little Cavalry, because the Country is low, moist, and divided by many streams. *Calicut* pretends to have some authority over all the Kings of *Malabar*, for which those of *Cananor*, *Cochin*, and *Coulan*, to which *Travancor* is sometime past united, seem to care little at present, a good part of the rest still hold for him.

Cananor, besides what it possesses in the firm Land, holds likewise some Islands among the *Maldives*, for having assisted one of their Kings against his Rebels; he possesses for the same reason the Isle of *Malicut*, 35 or 45 Leagues to the Northward of the *Maldives*: and the five Isles of *Diavandorou*, likewise 30 Leagues North from *Malicut*. All these Isles are small, *Malicut* of only 4 Leagues circumference, the others each 6 or 7: they are more healthful than the *Maldives*, their Inhabitants rich, and trade to the Continent, to *Malabar*, and to the *Maldives*, and elsewhere.

Cochin hath gained some reputation since it allied it self with the *Portugals*, by whose means it is freed from the tribute it ought to the King of *Calicut*, and hath drawn to its Estates the greatest trade of all *Malabar*; and the City is so increased, that it is not now inferior to *Calicut*.

And in all these Kingdoms aforementioned, contained in (and along the Coasts of) *Malabar*, there are several good, large, and well built Cities, being well inhabited, rich, and of a considerable trade; but those of most note in the said Kingdoms are called by the same names, as that in *Calicut*, *Calicut*; that in *Cananor*, *Cananor*, &c.

The Original Inhabitants of *Malabar*, are divided into *Bramenus*, *Nayres*, and *People*. The *Bramenus* are the *Priests*, *Sacrificers* to *Idols*; some addict themselves to *Arms* with the *Nayres*, others to trade; but to whatsoever vocation they apply themselves, they have a particular manner of living. The *Nayres* addict themselves wholly to *Arms*. The *People* meddle only with labour, Manufactures, Fishing, &c. and are like Slaves.

Besides the *Natives*, there are many Strangers, who live only on the Coast, and these are called *Malabares*, whence the name is communicated to the Country. These *Malabares* are *Mahumetans*, whereas the others are *Pagans*, and very Superstitious, worshipping an *Idol* seated on a Brazen Throne, and Crowned, but of a horrid form, enough to fright one; and unto this *Idol*, besides their Religious Ceremonies, they offer up the Virginity of all their Daughters before they are married, or else to their *Priests*. This *Idol* having in the place of his Privy parts, a sharp bodkin of Gold or Silver fastned, on which the Bride is forcibly set, which by reason of the sharpness forceth great store of blood to come; and if, though by her Husband, she proves with Child the first year, they believe this *Idol* got it, which they highly esteem; but by reason of the pain, the *Priests* by enjoying them first, doth quit them from the other, out of which two, all are served: they commonly marry at 10 or 12 years of age; they are very black, and well limbed; they wear their Hair long, and curl'd about their shoulders; they go naked, having only a cloth about their middle to hide their nakedness, which hangs down to their knees; they are treacherous, cruel and bloody-minded; there are likewise some *Jews*, and since the *Portugals* have set footing, many *Christians*, besides those which they call of *St. Thomas*; these being of the Mountains, and those of the Coast.

The chief
Cities.

The Natives
and Inhabitants
of Malabar.

The Peninsula of INDIA, within the GANGES.

its bounds.

THE Peninsula of India, which is beyond or within the Ganges, is our third and last part of the *Asiatique*, or *East-Indies*. We will give unto it all that rests of India unto China, and bound it on the East by China, and by the Sea of the *Philippine Islands*; on the South with that Sea, which flows amongst the Islands of *Sonde*; On the West by the Sea or Gulf of *Bengala*, and by the Estates of the *Mogoll*; and on the North we will stretch it as far as the *Tartars*: so that it will take up all India beyond the Ganges; what is possessed by the *Mogoll* excepted.

its Kingdoms and parts.

We have in this Peninsula a great number of Kingdoms, which we will consider under the three Principal ones, viz. *Pegu*, *Sian*, and *Cochinchina*. Under the name of *Pegu* we will range all those Estates and Kingdoms which lie upon the River, which descend from the Lake of *Chiamay* unto *Pegu*; under the name of *Sian*, all the Estates and Kingdoms which are about *Sian*; and under that of *Cochinchina*, all that is nearest to and on the West West of *China*. This last part is most Easterly of the three, the second most Southerly, and the first more to the West; and this hath almost all been subject to the King of *Pegu*; the other to the King of *Sian*, and the last was part of *China*.

P E G U.

The Kingdom of Pegu, and its parts.

THE Kingdom of *P E G U* when in its splendor was so rich and powerful, that some would equal it to *China*. *Vincent Blanc* saith that it contained two *Empires*, and 26 Kingdoms or Crowned Estates; I believe that the two *Empires* were *Pegu* and *Siam*, or possibly *Sian*, this having been subject or tributary to *Pegu*; and the Kingdoms are *Martavan*, *Manar*, *Tangu*, *Marsin*, *Jangoma*, and *Brama*, whose chief Cities are *Pegu*, *Brema*, *Canarana*, *Pandior*, *Cassubi*, *Ava*, *Boldia*, *Mandranelle*, *Tinco*, *Prom*, *Dunbacaon*, *Toloma*, *Maon*, *Arracon*, *Largaray*, *Cassubi*, *Ledoa*, *Tipoura*, *Xara*, and *Chacomasi*. The greatest part of these Estates taken apart, are rich, and powerful, being able to set forth to War, some 2, some 3, some 400000 men. They have in many places Mines of *Gold*, *Silver*, and *Precious Stones*, besides *Grains*, *Fruits*, *Herbs*, *Fowl*, and *Beasts*, which are here found excellent. The Kingdoms of *Tangu* and of *Brama* are the most powerful; since this hath sometime seized, and the other with that of *Arracan* ruined the Estates of *Pegu*.

Brama and its fertility, and chief places.

Brama besides its Mines of *precious Stones*, hath *Benjamin*, *India-Lake*, and certain *Herbs*, from which they take *Silk*; they make divers *Manufactures*, particularly *Caps* much esteemed. *Ava* abounds in all sorts of *Victuals*, hath divers *Metals*, *Musk*, and *Rubies*. *Canelan* hath the finest *Rubies*, *Sapphires* and other *Stones*. *Prom* hath *Lacque* and *Lead*. *Tinco* fetches many Merchandizes from *China*. *Vincent Blanc* esteems the City of *Canarana* as rich and magnificent as any in *India*; he places it between the Rivers of *Jama*, and of *Caypoumo* or *Pegu*, giving it four Leagues Circuit, and making it Metropolis of the Kingdom of *Caypoumo*, which is likewise called *Canarana*. This Country hath *Turquesses*, and *Emeralds* the fairest of all the East. *Cassubi* is in a Plain, bounded with high Hills, from whence descend many streams, which water the Plain, where there are excellent *Fruits*, among the rest *Pomegranates* the largest and best of *India*, excellent *Raisins* and *Manna*, which must be gathered before Sun-rise, which else dispatches it. Their Mountains are filled with savage *Beasts*, where they get the *Skins* and *Furs* of *Ermines* and *Sables* of divers sorts, all very exquisite. The people of *Transiana* are fair, and white; the *Women* exceeding beautiful, and the *Men* very proud: They have Mines of *Gold*, *Silver*, and *Diamonds*; their King keeps ordinarily 50000 Horses, 1000 Elephants,

phants, and pays his tribute to the King of *Pegu* in Horses, which are very excellent. Their *Forests* have many *Wild Beasts*; among the rest, that which gives the *Bezoir*. The Inhabitants of *Boldia* are esteemed the most honest and civil of all these quarters: So that they cannot but be people of Trade; and indeed all these Kingdoms have divers *Commodities* which make them rich.

The Kingdom of *Pegu*, which hath commanded, and had for Subjects or Tributaries almost all these Estates, and likewise others towards *Sian*, and *Siam* it self, cannot but be extremely rich and powerful. And truly, *Gold*, *Silver*, *Pearls*, and *Precious Stones*, have been as common in the Courts of the Kings of *Pegu*, as if all the *Orient* had brought all its Riches thither. The *Floors* of *Buildings*, the *Moveables*, and the *Vessels*, with which they served themselves for diversification, were so enriched within and without, with *Gold* and *Azure*, that it is not imaginable, if we did not know this to be the *Aurea Regio*, and likewise the *Argentea Regio* of *Ptolomy*: Yet this must be believed to have been long since; but however, that it is at present the richest Country of all the *Indies*: And for the same reason, one of the best peopled, and most powerful.

Pegu exceeding rich in Gold, Silver, and Precious Stones.

This Country, by reason of the overflowing of the River *Pegu*, which runs through the Kingdom, makes it become exceeding fruitful, and of a fat and rich soil; so that it produceth great abundance of *Grains*, *Fruits*, and other products of the Earth in great plenty. Also *Beasts*, *Fowl*, and *Fish*, great store of *Civet-Cats*, from whom they take *Civet*, *Lacque*, which is made by *Ants*, (as *Bees* make *Wax* with us) *Gold*, *Silver*, *Precious Stones*, *Drugs*, *Spices*, *Lead*, *Sugar*, &c. This Kingdom hath plenty of good Towns and Cities, its Metropolis bearing the name of the Kingdom. It is divided into the *Old* and the *New*; the one and the other together make a Square; being encompassed with a strong Wall, and a great Ditch well fortified, having on each side five *Gates*, besides many *Turrets* richly beautified. It is large, strong, rich, and stately; the King and his Nobility and Courtiers takes up the *New City*, which is separated from the *Old* by a Wall and Ditch well watered; in which are kept many *Crocodils* for the watching the place by night: The Wall hath several *Gates* on all sides, for the convenience of the people to pass in and out. The *Streets* are very fair, straight, and so broad, that fifteen men may ride a-bread on both sides. The *Houses* well built, having before every door *Palm-trees*, which are set, not only to make a pleasant show, but also to keep the Passengers from the heat of the Sun, which is very great.

its fertility and Commodities.

The City of Pegu, the chief of the Kingdom, described.

The *Palace Royal* is seated in the midst of the City, having its particular Wall, Moat, and other Fortifications; the *Palace* being very stately and large, the greatest part of the *Buildings* being sustained by *Pillars* of *Jet*, and all the *Stones* so shining, that those which are without, represent the Neighbouring *Gardens* and *Forests*; and those which are within the *Paved Chambers*, other *Rooms*, and the *Ceilings* above, so well, that one seemeth to walk on *Gold* and *Azure*. Nor doth this his stately *Palace* exceed his Magnificence and Pomp, without which he is never so much as seen. The *Old City* is inhabited only by *Merchants*, *Artificers*, and *Sea-men*, where there is great store of *Ware-houses* strongly built of *Brick* to prevent fire (which the City is much subject unto,) in which the *Merchants* keep their *Goods*. And for the better increase of Trade, the King doth constitute Eight *Brokers*, whose Offices are to look after and sell the *Goods*, as well of *Strangers*, as the *Inhabitants*; giving a very just account thereof: For which, they are allowed two pence per Cent. The like is observed in the buying of *Commodities*. And these *Brokers* by their places, are obliged to provide *Strangers* or *Merchants* with a *House*, and orders certain *Maid*s of the City to go to him, that out of them he may make his choice; which done, he contracts with her friends to pay them a certain sum for the use of her, as they can agree, which is not great; and this *Maid* serveth him as his *Servant* by day, doing what he commandeth; and as his *Wife* by night: And at the expiration of the term agreed upon, he leaveth her, and she goeth to her Friends without any disgrace at all. The People are of a mean stature, nimble and strong, great lovers of *Women*, which takes them from warlike affairs, in which they are not very expert. Their habit is but mean, contenting themselves for

The Palace Royal.

The People; their Habit.

Their belief.

for the most part, with a piece of *Linnen* to cover their nakedness; they all black their *Teeth*, because they say *Dogs* teeth are white. They are generally all *Pagans*, and believe that *God* hath under him several other *Gods*; that he is the *Author* of all good which arriveth to mankind: But he leaveth all evils which belong to man, to the *Devil*; by reason of which, they so much adore and fear him, lest he should hurt them; which *God*, being good, they say, will not. Their *Devotion* they perform on *Mundays*, their *Priests* going about with *Tin-basons*, making a noise to waken the *People*, and inviting them to their *devotions*, in which they chiefly exhort them to *Morality*, as to avoid *Theft*, *Adultery*, *Murder*, &c. and to love *Vertue*. They have a great esteem for their *Priests*, who live a very solitary and exemplary life. They have Five principal *Feasts* which they observe very strictly, ceremoniously, and with great state and pomp. They that Marry buy their *Wives* of their *Parents*; and when he is weary of her, he may send her home, but must lose the Money he paid for her: But if she leave him, as she may do, then he may receive the Money paid for her.

Marriage not kept during life.

SIAN or SIAM.

Kingdom of Sian, its parts.

The Kingdom of *SIAN*, and those Estates, which we will comprehend under the name of *Sian*, are to the *North* of *Pegu*. We may consider them in two principal parts; of which, one shall retain the name of *Sian*, and the other that of *Malacca*. This latter is a *Peninsula*, which extends it self from the first degree of *Latitude*, unto the 11 or 12; from whence the first advances it self into the Main Land, unto the 19 or 20 degree on this side the *Equator*. They reach then each 250, and together 4 or 500 Leagues from South to North. But the *Peninsula* of *Malacca* is very streight, not being above 10 or 12 Leagues broad in the *Isthmus*, which separates it from *Sian*; in other places 20, 30, 40, and sometimes 80. *Sian* is almost of an equal length and breadth.

Its extent.

Under the name of *Sian*, separated from the *Peninsula* of *Malacca*, we comprehend the Kingdoms of *Sian*, *Martaban*, *Jangoma*, and *Camboja*; under the name of *Malacca*, those of *Tanacerin*, *Juncalaon*, *Singora*, *Queda*, *Pera*, *Patane*, *Pan*, *Malacca*, *Ihor*, and others, as in the *Geographical Table*.

The chief places of the particular Sian.

The Kingdom of *Sian*, especially so called, hath several Cities of note, *viz.* First, *Odiaa* which some call *Sian*; the *Metropolis* being a City of a large extent, a place of so great strength, that in 1567. they stoutly defended themselves against an Army of 140000 fighting Men, which the King of *Pegu* brought against them, for twenty Months together: By reason of which, together with several other mutations that have since hapned amongst them, the City hath been much eclipsed of its former beauty, splendor, and riches; yet by reason of its commodious situation on the River *Menam*, is still a place of great Trade and Commerce, is rich, and populous. The Houses are built very high, by reason of the annual overflowing of this River about the Month of *March*: So that it covereth the *Earth* for about 120 Miles in compass; which renders these Countries very fruitful, as the *Nile* doth *Egypt*. During this Inundation, Its *Inhabitants* retire to the upper Rooms of their Houses; and to every House there is a Boat, or other Vessel belonging; by which means, they negotiate their affairs, until the River returns to her usual bounds.

Its Commodities and Trade.

The principal *Commodities* of this City, or indeed of the Kingdom, are *Cotton-Linens* of several sorts, *Benjamin*, *Lacque*, of which they make excellent *Hard Wax*; Also that costly Wood which the *Portugals* call *Palo Dangula*, and *Calamba*, which is weighed against *Silver* and *Gold*; for the *Perfumes*; and the Wood *Sapon*, used by *Dyers*; also *Spices*, some *Drugs*, *Diamonds*, *Gold*, *Camphora*, *Bezar-Stones*, *Musk*, *Porcelaine*; and lastly, that excellent *Wine*, or *Distilled Liquor*, which they call *Nipe*, which they make of *Cocos* or *Indian Nuts*, being of great esteem over all *India*, and elsewhere.

Its other places are *Bankock*, noted for excellent *Pepper*. *Lugor* seated on the Sea-shore, and *Socotay*, famous for having a *Temple* only made of Metal, which is

is 80 Spans high, and answerable in length and breadth, being adorned with a bundance of Idols, built by one of their Kings at his coming to the Crown.

The Kingdom of *MARTABAN*, towards the Gulph of *Bengala*, is contiguous to *Pegu*, to which it hath been subject, at present is to *Sian*. This Kingdom hath many Ports frequented for Trade; for besides its *Grains*, *Fruits*, *Oils*, and *Medicinal Herbs*, it is rich in Mines of *Gold*, *Silver*, *Iron*, *Lead*, *Steel*, and *Copper*. It hath *Rubies*, *Lacques*, and *Benjamin*, &c. And they make Vessels of *Earth*, which they call *Martabanes*, of which some are so great, that they hold a Bushel. This is a kind of *Porcelain* varnished with black, and wherein they keep *Water*, *Wine*, *Oil*, and all sorts of *Liquors*; and for this reason they are esteemed in all the East.

JANGO MA, on the confines of *Pegu*, *Siam*, and *Brama*, hath been subject or tributary sometimes to one, and sometimes to another. It hath *Gold*, *Silver*, *Copper*, *Musk*, *Cotton*, of which they make Manufactures, *Pepper*, &c. Its People are more addicted to Horse than Foot service.

CAMBOJA is the last and most Southerly part of the *Peninsula*, which is between the Gulphs of *Siam* and *Cochin-china*. The principal Cities are *Ravecca* and *Camboja*, of which the Kingdom takes its name; which is under the 10th or 11th degree of *Latitude*, and on the principal and most Easterly branch of the River *Menam*, which (as it is believed) comes from *China*; but it should be said from some Regions formerly subject to, or which were part of *China*.

The People in their Manners and Customs resemble those of *Sian*, whose Subjects they have been, and whose Tributaries but lately they were.

MALACCA.

IN the *Peninsula* of *Malacca* are divers Kingdoms, which are taken notice of in the *Geographical Table*; which all (except the City of *Malacca*) are likewise tributary to that of *Sian*. *Tenasserin* is a Country of Trade, by reason of its *Archipelago*, which contains several *Ilands*; and of its *Isthmus*, which facilitates the transportation of Merchants from one Sea to another; and of its Ports, which are commodious. Its other places are *Juncalaon*, *Zueda*, *Pera*, and *Malacca*, all which places afford *Nipe* of burning *Wines*.

IHO R is beyond *Cape de Sincapura*, and on the utmost point of the *Peninsula*: Its chief City was taken and ruined by the *Portugals* in 1603, who took from thence 1500 Brass Cannons. The King of *Ihor* for revenge besieged *Malacca* in 1606 with 60000 Men, but was constrained to raise his Siege; there are some petty Kings which are his Tributaries, *Pahang* hath *Lignum Aquilae* and *Calamba*, near to that of *Cochin-china*; of *Camphire*, like to that of *Borneo*; *Gold*, but of a lower alloy than ours; *Petra Porea*, of near as much vertue as the *Bezoar* against poison; *Diamonds*, *Nutmegs*, *Mace*, &c.

PATANE within few years is grown famous, the Kingdom being frequented by divers Nations, particularly by the *Chinois*, who bring thither *Porcelaine*, divers Manufactures and Instruments of Husbandry; instead of which they carry back *Timber* for Building, *Cordage* made of *Cocos*, *Rice*, and divers *Skins*, &c. The *Pepper* is excellent, but dearer than at *Batavia*. Their *Saroy-Boura*, that is, the matter of *Swallows Nests*, which we shall speak of in *Cochin-china*, is much sought after. The Soil is good, producing Fruit every Month in the year. Their *Hens*, *Ducks*, and *Geese*, often lay Eggs twice a day. Amongst an infinite number of Fowl they have *white Herons* and *Turtles* of various colours, like *Paroquets*.

Patane, *Singora*, *Brodelong*, and *Ligor*, are on the same Gulph, which may be called also by *Patana*, and makes part of that of *Sian*: *Patane* and *Ligor* towards the two ends; *Singora* and *Brodelong* in the midst, and at the bottom of this Gulph; and these two last are head Cities of Provinces (others call them Kingdoms) under *Sian*; the two first Kingdoms are tributary to *Sian*: They have nothing particular above *Patane*, to which they are all united.

O O

The

Martaban, its commodities, &c.

Jangoma, and its commodities.

Camboja.

Its People.

Peninsula of Malacca, its parts, commodities, &c.

Ihor, its chief places and commodities.

Patane, and its Trade.

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I N D I A.

The City of
Patane, and its
Trade.

The chief City of *Patane* takes its name from its Kingdom so called, seated on the Sea-side betwixt *Malacca* and *Siam*. Its Houses are well and handsomely built, either of *Timber* or *Canes*. The *Palace Royal* is encompassed with a *Palisado*, and its *Mosques* are made of *Brick*. This City (as also the whole Kingdom) is very populous, and enjoying a good Trade. Its People are inclined to a Swarthy brown complexion, well proportioned, ingenious, using Arts, especially *Navigation*; but above all, great lovers of *Women*. The Country affordeth most of the *Indian* Commodities, by reason of which it hath a good Trade. *Malacca*, a City and Kingdom, is at present the most famous of all those which of the *Peninsula* we have comprehended under the name of *Malacca*: It hath been subject to the King of *Siam*. A particular King had made himself Master of it, before that the *Portugals* entered the *Indies*; the Country remaining still to the Kings of *Siam*. That which hath made this City great, rich, and powerful, (though the Air be unhealthy, and the Soil almost barren) is the advantage of its situation, being seated on the River *Gasa*, which is about 3 Leagues broad, and in the center of the firm Land, and of all the Islands of the *East Indies*, commanding a Streight, which is the Key which makes it the Staple of all the *Indian* and *China* Commodities; by reason of which it is a place of great Traffick, and very populous, containing about 12000 Families, besides Strangers. Its Houses are low, and not over curiously built, and the Streets narrow; the City is about 2 miles in length, and of half the breadth, being a place of good strength, and defended by a strong Wall and Castle, is watered by the River *Gasa*, and the chiefest place of pleasure is the *Buzzar*. Before, and nigh to this City, are the Islands by the *Portugals* called *Ilha de Naos*, and *Ilha de Pedra*. The usage of divers Nations of the *Indies* hath so fashioned the *Malayo*s Language, that it is the best and most elegant of all others.

Arbor tristis, a
great rarity.

Among the Rarities of *Malacca*, or rather among the wonders of the World, may be counted *Arbor tristis*, or the *Sad Tree*, which bears Flowers only after Sun set, and sheds them so soon as the Sun rises, and this it doth every Night throughout the whole year. These Flowers are almost like to (but fairer and more odoriferous than) *Orange Flowers*. Some of these Trees have been transported and brought as far as *Goa*, and some other places of the *Indies*; but no care could ever preserve them unto *Europe*.

The People of
Siam, their habit,
disposition,
on, &c.

The Provinces of this Kingdom of *SIAM* are very populous, especially those which have the benefit of the Sea or navigable Rivers; but inhabited by different People, but for the most part well proportioned, of a Swarthy complexion, more addicted to *Venus* than *Mars*; ingenious, but lazy, und constant, and deceivers. Their habit is a painted Cloth, which they wear about their middle, and hangeth down to their knees; besides which the Men wear short Shirts, and the Women cover their Breasts with a piece of Linnen, which they tie about their Necks, all observing one fashion; the Persons of Quality being only known by their attendence. Their *Marriages*, *Burials*, and other Ceremonies, are much the same as those aforesaid; they bring up their Children very well, instructing them in Arts: by which, according to their abilities, they are advanced to preferment. In their Punishments they are severe and different, according to the nature of the crime. His Army doth consist of his own Subjects in the nature of our *Trained Bands*, which are to be ready upon all occasions, and not of a standing Army. Their Arms are *Bows* and *Arrows*, *Swords*, *Pikes*, and *Bucklers*; they have no *Fire-Arms*; their Horse is not good; their chief strength consisting in their *Elephants*.

Their Arms.

The Kings of
Siam absolute
Monarchs, are
rich, powerful,
and live in
great state.

The Kings of *Siam* are esteemed absolute Monarchs in their Dominions, making and breaking Laws as they please; imposing Taxes on their Subjects; punishing, condemning and seizing the Estates of those who speak or act contrary to their minds; make War and Peace as often as they please. They and the like actions he doth of himself, without consent of any; yet he hath a Council, which are his Nobles, of whom he will hear their Opinions and Advice, but act as best pleaseth him. He hath but one Wife, who bears the title of a Queen, but hath many Concubines. In his Apparel

and Attendance he is very magnificent and stately, not stirring abroad without great pomp; by reason of which, as also through his austerity, he hath great veneration shewed him. His Revenue is very great; he bestoweth his Honour or Preferment on those who best please him, not regarding Birth and Education, it being not hereditary. For the administration of Justice, most Cities have their Jurisdictions and Judges.

This great Kingdom is not in all places alike; for in some parts it is covered with Wood, in others Mountainous, and to the Sea-side, Marshy, Flat, and Fertile, affording divers and rich Commodities, as aforementioned; and being plentifully furnished with Rivers, Bays, and Harbours, for the conveniency of Shipping.

COCHIN-CHINA, TUNQUIN, &c.

I Esteem under the Name of *COCHIN-CHINA* taken in general, all that lies to the Eastward of the Kingdoms of *Camboja*, *Siam*, *Pegu*, and *Ava*, &c. to the Westward of *China*, and the Gulph of *Cochin-china*; and which is washed on the South with the *Oriental Ocean*, and bounded on the North by those high Mountains which limit *Tartary*; extending it self from the 9th degree of Latitude on this side the *Equator*, unto the 34th or 35th towards the North, which make more than 6000 Leagues; the breadth not being above the 8th or 10th part of its length.

Cochin-china,
its bounds and
extent.

The name of *Cochin-china*, according to some, signifies *West China*: so the Natives of the Country call it *Onam* or *Anam*, that is, the *Occidental Quarter*; and this extends to the view of *China*, of which it was once part, and whose Language, Manners, Customs, Government, Religion, and other Ceremonies they yet retain, (which having occasion to treat of in *China*, as more convenient, for brevities sake I omit them here, referring the Reader to the description of *China*.) But these Quarters being retired from the subjection of the *Chinois* above 800 years ago, were a little after as easily divided into divers Estates. The name of *Cochin-china* being kept in the most Southern parts; that of *Tunquin* having taken the middle and more Northernly parts, passing under the name of the People called *Lays*, the Kingdom of *Ciocangue*, the People *Gueyes*, *Timocoves*, &c. who have in part taken and received the manners and barbarousness of the *Tartars*, their Neighbours.

Its Name, why
so called.

Cochin-china likewise is divided into *Chiampaa* and *Cochin-china*: *Chiampaa*, between *Camboja* and *Cochin-china*, regards the Isles of *Sonde* towards the South; the *Philippines* towards the East, and touches on *Tunquin* to the North. Its principal City bears the same name, according to most Authors; but according to others, *Pulocaccin*. It hath nothing which is not common to *Cochin-china*, and therefore we shall say no more.

Its parts and
chief places.

Cochin-china particularly taken, is better known than all the neighbouring Countries, because it is wholly upon the Sea, having 150 Leagues of Coast, and not above 40 or 50 in breadth, between the Mountains of *Kemois* (a barbarous People) and the Sea. Its Provinces are descending from North to South: *Sinua*, *Cacciam*, *Quangwa*, *Quingui* or *Pulacambis*, and *Ranran*. The two first touch upon *Tunquin*, the last touch on the Kingdom of *Chiampaa*. The King makes his ordinary residence in the Province of *Sinua*, or at *Cacciam*, Cities of the same name with their Provinces.

All the Country is fertile, abounding in *Rice*, *Fruits*, and *Herbs*, breeding many *Powels* and *Beasts*, and the Sea excellent *Fishes*. It produces *Cinnamon*, *Pepper*, *Lignum Aquile*, *Calamba*, and *Benjamin*. Its temperature is pleasant, though under the *Torrid Zone*; the Air, healthful, and the Soil so abundant in all things, that the Inhabitants have no knowledge either of Contagion or Famine. They have *Gold*, *Silver*, *Silk*, *Porcelain*, and divers other valuable Commodities. All sorts of Nations frequent its Coast, by reason of the goodness of its Ports; and because its Inhabitants are Courteous, Liberal, kind to Strangers, and faithful in their dealings.

Its fertility,
commodities,
temperature,
and people.

They are courageous, and more warlike than those of *Tunquin* or *China*, handling all sorts of Arms with no small activity. They are Idolaters; *Christianity* was introduced in 1620, and began to flourish; but their Kings have of late very much persecuted them.

Amongst the particularities and rarities of the Country, we must place the *Lutt*, an Inundation, which in Autumn covers with its Waters almost all the Country; it renews from 15 to 15 days, remaining only 3 days at a time, making the Earth so fruitful, that it brings forth its increase twice or thrice a year. Their *Saroy-Boura*, or matter wherewith certain *Swallows* make their Nests, which after those Birds leave dry and hardned, they gather in great quantities, which being steeped and moistned in Water, serves for Sawce to all sorts of Meat; and as formerly *Manna* communicating such a variety of taste, that it seems to be composed of *Cinnamon*, *Gloves*, *Pepper*, and other Spices. Their *Lignum Aquile* and *Calamba* come from the same Tree; the first from the Trunk of a young Tree, the last from the Trunk of an old Tree: but this last is much more esteemed than the other, both for its odour and vertue. A pound of it on the place where it is beaten down is worth 5 *Ducats*, being brought to the Port, 15 or 16; and if transported to *Japan*, 200. If some piece be found to make a whole Pillar, it is worth 3 or 400 *Ducats* the pound. The *Lignum Aquile* amongst other things, serves to burn the dead Bodies of their Kings, Princes, and Priests.

Among the Wood they use for Buildings, there are two sorts which they call uncorruptible, whether in Water or Earth; their Trees they call *Thins*: the Wood of the one is near as black as *Ebony*, the other near the colour of *Tew*. Both the one and the other taken out of the Bark is smooth and glib, so solid and weighty, that it sinks to the bottom of the Water, and serves also for Anchors for *Ships*. They make Pillars, on which they erect their Buildings; and before the time of the *Lutt*, they drive Joists and Planks between those Columns, and with *Canes* and *Reeds* accommodate divers Apartments, which they take away in the time of those Inundations, that the Water may run the freer.

T U N Q U I N

The Kingdom of *TUNQUIN* is part on the Sea, and part on the Main Land; it bounds on the Sea at the bottom of the Gulph of *Cochin-china*, there where it divides *China* from *Cochin-china*, and hath about 150 Leagues of Coast. On the Land it extends itself from the seventeenth degree of *Latitude*, on this side the *Equator*, unto the twenty third, which are likewise 150 Leagues from North to South: Its breadth being only about 100 Leagues from East to West.

This Kingdom contains Seven Provinces, of which the three most Southernly are, *Bochin*, *Gehan*, and *Tinboa*; the four most Northernly are, *Beramar*, *Kedon*, *Kenam*, and *Kethay*. *Bochin* touches on *Cochin-china*, and the two other advance along the Gulph towards the North; amongst the four last, *Beramar* and *Kedon* are towards *China*, *Kenam* and *Kethay* towards the People *Layes*. The King of *Tunquin* ordinarily entertains a Militia of 50000 Men, taken from the three Southernly Provinces, and paid by the four Northernly, because these last lately revolted, and the other remained in obedience.

Kecchio is the chief City of the Kingdom, where the King ordinarily resides. It is not above twenty miles in circuit, but hath a Million of Inhabitants. Some Authors will have it called *Tunquin*, that is, the Court of the West, and that the Kingdom took its name from it. The Land hath beautiful Plains, and watered with many great Rivers; which with the Rains and melting of the *Snow*, which descends from the Mountains that separates it from the *Layes*, the Kingdom of *Ciocangue*, *China*, and *Cochin-china*, make it fruitful

Several Rarities here found.

Wood as heavy as iron, and which consumes not, except burnt.

The Kingdom of *Tunquin*, its bounds, extent, and situation.

Its Parts.

The King very powerful.

Its chief Places.

fruitful by their Inundations, rendering it better and more abundant than *Cochin-china*. Yet hath it neither *Corn*, *Vines*, nor *Olive Trees*; but they gather *Rice* twice a year, of which they make Bread; they fetch in *Wine*, and instead of *Oil* make use of the matter taken from *Swallows* Nests, of which they have no less quantity than *Cochin-china*. They have neither *Asses* nor *Sheep*, but many *Horses*, *Elephants*, and *Rhinoceroes*, whose Flesh, Skins, Bones, Teeth, Nails, and Horns, serve for Antidotes against Poyson; they have so much *Pullain*, *Pigeons*, *Turtles*, and other Fowl, that they give them almost for nothing.

Amongst their Fruits they have fair *Pomgranates*, which beyond the ordinary excellency of that Fruit hath here a particular and delightful Juice. For *Fish* they make account, that in the Seasons there daily goes 10000 *Barks* out of their Ports to *Fish*. The *Catholick Religion* was so introduced here some years past, that there was esteemed to be more than 200000 *Christned Souls*, 200 great Churches, and a great quantity of *Chapels* and *Oratories*; there hath since happened divers changes. In these Kingdoms the *Portugals* have several Towns and Cities, by which they have a great Revenue.

In the Gulph of *Sian* are seated several Isles, some of which are well known; as the Isle of *Goeteinficos*, about 27 Leagues long, and 15 broad, seated about three or four Leagues from *Ligor* and *Bordelong*, in the *Peninsula* of *Malacca*; and between this Isle and the Land of *Malacca* lieth several small Isles. The next of note are the Isles of *Macaria* and *Panian*; then the Isles of *Cara*, which are four in number; and the Isles of *Colyn*, which are three in number; with several others of no account.

In the Gulph called the Gulph of *Bengala*, are likewise seated several Isles, the chief of which are the Isles of *Chubedu*, *Chudube*, and *Ledoa*, of *Dos Alvantados*, *Aligada*, and *Durondiva*, whose chief place is *Siriao*; the Isles of *Andemaon*, which are 10 in number, two of which are indifferent large; likewise the Isles *dos Cocos*, *dos Caboses*, *Tanasserri*, *Tavay*, *Alta*, and *Cravo*, which said Isles are not far distant from the Sea-shoar of the Land of *Sian*, two of which are each about 20 Leagues in length; and the other 10, and the other about 7 in breadth. Also in this Gulph are the Isles of *Caremubar*, of *Raza*, *dos Sombremos de Palm*, *Siano*, *Sumbilano*, *Batun*, *Pera*, *Pincan*, *Canal de St. George*, *Nicubar*, and others; many of which are well known and frequented by Merchants, affording several of the *Indian Commodities*.

Its fertility and commodities.

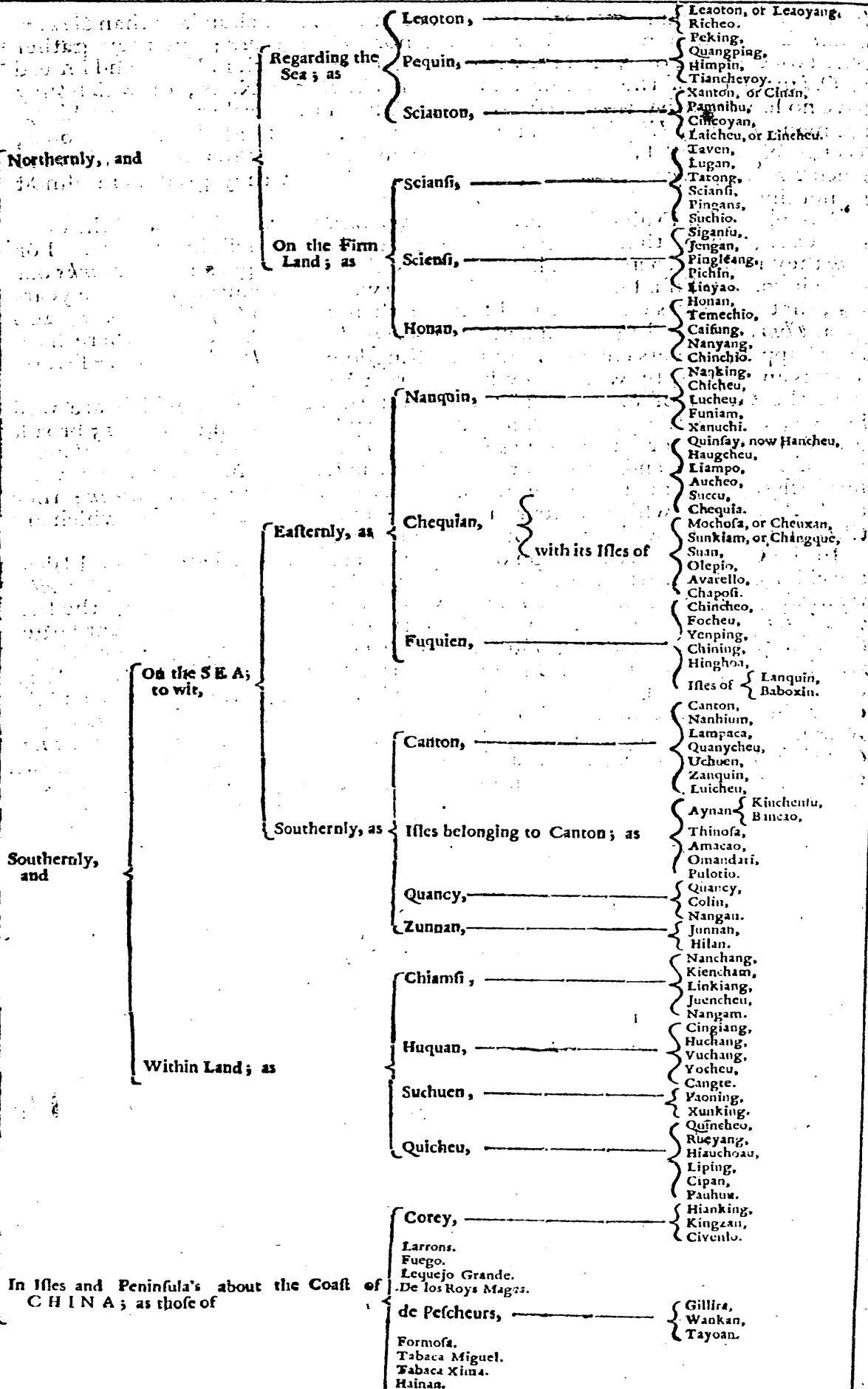
They embrace Christianity.

Isles seated on the Gulph of *Sian*.

Isles seated in the Sea, called the Gulph of *Bengala*.

The

The Kingdom of CHINA, with its Provinces and Isles, which may be considered as they lie





T H E

The Isles of IAPON or Nippon

C H I N A N or

Tropick of Cancer

Philippina

Isles

A New Mapp of y Empire of
C H I N A
with its severall Provinces or Kingdomes
Together wth the adjacent Isles of Iapon or Nippon
Formosa Hainan etc.

Whittell fecit 1663

South

CHINA.

CHINA is on the East of *Asia*, and of all our Continent; and if we consider its greatness, fruitfulness, riches, the great number and politeness of its Inhabitants, the beauty of its Cities, its Manufactures, and for having had the inventions of *Silk, Printing, Paper, Artillery, &c.* it is worthy of note.

The Kingdom of China.

Ptolomy knew this Country under the name of *Sinarum Regio*; but it hath been observable by us, that the *Chinois* knew not any thing of that name; and that when this great Empire falls from one Family to another, he that begins the Family gives such a new name as he pleases to the Kingdom: and these names are very specious; as formerly it had the name of *Tan*, that is, *Boundless*; *Tu*, that is, *Repose*; *Hin*, which signifies, *Great*; *Sciam*, which is an Ornament; *Cheu*, that is, *Perfect*, and so others: The Family that reigns at present gave it the name of *Min*, that is, *Brightness*; and the last Kings of the same Family have added *Ta*, which is, *Kingdom*, so that *Ta-Min* signifies the Kingdom of *Brightness*. The People neighbouring upon *China* take little heed of the changing of these names; but on the contrary, some name it in one manner, and some in another: Those of *Cochin-china* and *Siam* call it *Cin*, from whence we have formed the name of *China*; those of *Japlan*, *Tan*; the *Tartars*, *Han*: the *Saracens* and *Mahometans* of the West call it *Catbay*; under which name is likewise comprehended the Eastern part of *Tartary*.

Its several Names.

Its greatness extends from the 18th or 19th, unto the 43th or 44th degree of *Latitude*: and from 147 to 166 degrees of *Longitude*, and in some places from 145 to 172; that is about 24 degrees of *Latitude*, which amount to 600 Leagues, from North to South; and 18 or 20, and sometimes 25 degrees of *Longitude*, which amount to 4, 5, or 600 Leagues from West to East: some Authors have esteemed this Kingdom greater; but the Father *Jesuites* have observed the height of *Pequin*, and its most Northern parts.

Its extent.

It contains 16 Provinces, all rich, plentiful, and which might well merit the name and title of Kingdoms; they are subdivided into 28 Regions, or less Provinces, of which some have 12, some 15 fair Cities; amongst which are 180 great Cities, 319 great Towns, and 1212 lesser; in all 1771 Cities and fair Towns.

The number of its Provinces, Parts, Cities, and Towns.

However it be a great number, there is the same likewise of lesser places; insomuch that in *Anno 1557* there was found in *China* more than 40 Millions of Men which paid Tribute or Tax: In 1616 there was near 60 Millions. Among, which the *Women*, *Young men* under 20 years, *Eunuchs*, *Souldiers*, *Officers*, *Sick people*, and those of the Kings kindred were not comprehended, which together would amount to a very great number.

China very populous.

There are accounted likewise Tributaries to the King of *China*, 3 Kings towards the East, 53 towards the West, 55 towards the South, and 3 towards the North, which are 114; and many have assured his Revenue to be 150 Millions of Gold per annum.

Divers Kings subject to the King of China.

The bounds of this great Monarchy are very advantagious, the Sea washing it on the South and East, where there are divers little *Islands* and *Rocks* along the Coast; a Mountain of above 500 Leagues long being its Northern bounds, and great sandy Deserts and Forests, mixt with Mountains, limit it on the West unto the South Sea: these were its natural defence; but upon the *Tartars* often invading

China bounded.

A Wall about
China.

invading them, and being at once Master of 33 important Towns, and fearing lest they should be quite subdued, concluded a Peace with the *Tartars*, agreeing to pay them 2000 *Picos* of Silver for the defraying the charges of their Army, and they to return home and render up the 33 Towns to the *Chinoises*. This Peace continued a good while; but they fearing the incursion of the *Tartars* again, the King at a general Council with his Peers, for their further peace and safety did agree to build a Wall about their Kingdom, or rather Empire, which might serve for a Bulwark against all Invaders, in pursuance whereof there was raised 10000 *Picos* of Silver, which at 1400 *Ducats*, each *Pico* amounts to 15 Millions of *Gold*; and entertained 25000 Men to carry on this work, whereof 3000 were appointed as Overseers of the rest; and thus in the space of 27 years, they quite finished the circumference of the Wall, which is 70 *Jaos*, in length each *Jao* being 3 Leagues, which is 650 miles. This Wall is 30 foot high and 10 foot broad, being made with Lime, Sand, and Plaster on the outside, by means whereof it is so hard, that it is Cannon proof; instead of *Bulwarks* it hath *Watch-Towers* 2 Stages high, flanked with high Buttreffes as thick as a Hoghead, and exceeding strong; the expences for the performing of this Work was divided into 3 parts, of which the Commonalty paid one, the Priests and Isles of *Aynan* another, and the King and Peers the other: and in this great enclosure there are but 5 Entries, in which both the King of *China* and *Tartary* keep Garrisons; in each of which the *Chinois* continually keep at great expences about 6000 Horse, and 1000 Foot, which for the most part are all Strangers of different Nations bordering upon this Empire, which are kept for defence thereof, when occasion shall serve; in all this length of Wall there is 320 Companies, each of them containing 500 Souldiers, which in all are 160000, besides Officers, &c. which will make up the number 200000, and are all maintained at the Kings charge; but most of these are Malefactors, which doth much lessen the pay, they working for nothing. But for all this strong Wall, and their great care in keeping it, the *Tartars* of late have almost over-run all *China*. Besides its extent, the great number of its people, and the Forces of this Kingdom, the Soil is generally exceeding rich and fertile, and abounding in all things; and so divided by Rivers and Navigable Channels, that some have affirmed that there are as many River-boats in *China*, as in all the World besides.

Its Fertility
and Fruits.

They have all sorts of Grains and Fruits, except the *Olive* and the *Almond*, instead of which they have many others not found elsewhere; and moreover their Grains, Fruits, as also their Plants and Herbs, are far beyond ours in excellency and goodness, and their Flowers more beautiful and various than ours. This Country produceth all sorts of living Creatures, as Beasts and Fowl, both tame and wild; and so excellent, that the flesh of their *Camels*, *Mules*, *Asses*, *Dogs*, &c. are sweet, and good to eat; all Provision is here found so plentiful, that a fat Cow is not worth above 10 Shillings, a *Buffler* a Crown, a *Hog* 2 Shillings; all sorts of Fowl they sell by the pound, the common rate after their Feathers are off, being not above 2 Pence; and Fish they have in such great plenty, as well in their Rivers as in the Sea, that they are not worth the selling. The like may be said of their Grains and Fruits, which are found in as great abundance; they have also as great plenty in divers rich Commodities, as in excellent *Sugar*, *Wax*, *Hony*, all sorts of *Spices*, several *Drugs*, *Rice*, *Wool*, *Wines*; great quantities of *Silk* and *Cotton*, of which they make a great number of different Manufactures. They have all sorts of Metals, but their *Gold* and *Silver* is of a lower alloy than ours; and therefore it is that they so much esteem *English Gold*, and *Pistols* and *Rials* of *Spain*: they have much *Rhubarb* and *Amber*, quantity of *Musk-Civet*, which would be the best in the World, if they did not falsifie it: their *Camphire* is not near so good as that of *Borneo*, and their *Pearls* are all *Barroques*. They have much *Saltpeter*, with which they make (besides *Gunpowder*) a thousand devices and artificial Fires. They have so great plenty of *Salt*, that the Custom only in the Town of *Canton*, (as Mr. *Lewis Roberts* reports) doth bring in to the King 180 thousand *Ducats* yearly.

Its Commodi-
ties.

They

The *Chinoises*
very ingenious

They have abundance of very fine Inventions, of which some are common with us, but which they had before us; as the disposition of their *Passes*, their *Paper* which they make of the bark of *Bambus* or *Canes*, but so thin, that it will bear *Ink* on both sides. In their writing they make use of *Pencils*, and not *Pens*, which by reason of the smoothing of the *Paper*, they cut their *Characters* exceeding neat, their writing consisteth only of *Characters*, which make so many *Syllables*; and the *Syllables* so many different names, whose significations are various; of these *Monosyllables* they have near 60 or 80000, they write from top to bottom; advancing their lines from the left hand to the right, and almost all their knowledge consists only in reading well. In their *Printing*, they are so expert, that they can take away, augment, or change as much or as little as they please in a moment. Their *Artillery* which they dismount by pieces, and their *Chariots* which they make run with a Saile, &c. Their *Manufactures* of *Silk*, which they say they have had 3 or 4000 years. They make use of *Tables* and *Seats* when they eat, and of *Beds* when they repose; which their Neighbours do not. Their *High-ways* are straight, paved, and cut sometimes out of the *Mountains*. They have *Salt* which they extract from the Sea-water and from *Mines*. They make and subtract their *Sugar*, *Honey* and *Wax*, from diverse things, to wit, from *Bees*, from the fruit of certain *Trees*; and from certain little *Worms* they keep in those *Trees*; and this sort is the best, the whitest, and its *Candle* burns the clearest of all.

Their way of
writing.

Those things which they have most particularly, are their *Drinks*, which they make with the leaves of certain *Shrubs*; a *Gumm*, and an excellent *Farinise*, which they get from the *Barks* of *Trees*. Also their *Porcelain*, which they make of *Earth*, in the Province of *Quiamsi*, of which they make excellent *Cups*, *Dishes*, &c. far exceeding *Glass-Metal*.

The *Chinoises* are for the most part well shaped, of a good Stature; they have commonly broad faces, flat noses, little eyes; they never cut the hair of their heads, but on the contrary they wear little or no *Beards*, and as to their complexion they differ according to the *Climat* under which they abide, as those in the Province of *Pekin* lying in the most Northern part of *China*, are of a fair complexion like the *English*; when as those towards the South, as in the Province of *Canton*, &c. are like the *Moor*s of *Barbary*; their Women are handsome, yet make use of *Paint*; they seldom are seen abroad.

Their shape &
stature.

They wear their Garments very long, with long loose sleeves; those of the Northern Provinces make use of *Furs*, and those of the Southern wear *Silk*; but persons of quality are richly habited and adorned with many *Pearls* and *Precious Stones*. They are great lovers of Women, as also of their bellies; commonly eating thrice a day, their diet being good and cleanly drest; and they are neat in eating it, making use of *Knives* and *Forks*.

Their habits

They are very ingenious, and much more industrious and Politick than their Neighbours, having the use and understanding of *Arts* and *Sciences*, both liberal and Mechanical, as *Philosophy*, *Physick*, *Astronomy* concerning the *Planets* and *Stars*, the *Eclipses* of the *Sun* and *Moon*, &c. in the which they have abundance of vain fancies. Also they are expert in *Musick* and making of *Musical Instruments*, *Navigation*, *Architecture*, *Painting*, *Sculpture*, making of *Clocks*, casting of *Metals* in *Images*, *Medals* or the like; these with several other inventions too tedious to name, they had the benefit of before us; yet are they not in that perfection as they are with us. And as for *Arms*, they have their courage so low, that both the *Souldiers* and the *Commanders* submit themselves to the whip, when they have been wanting in their duty; so that it was said that when the *Tartars* assaulted them, it sufficed them only to have shewed them the whip, to have put them to flight, as the *Scythians* their predecessors once served their slaves, who during their long absence had married their *Mistresses*. It is likewise reported that the *China* *Horses* could not suffer the weighing of the *Tartarian* *Couriers*; and the *Chinois* *Cavaliers* being of the same humor, they were more likely to run than fight.

They are ad-
dicted to Arts
and Sciences.Invented their
CommoditiesNot good Sould-
iers.In their odd
and various
ways

Moreover

Moreover the *Chinois* are very ceremonious, courteous, and great complainers, for which they have several Printed Books which they teach their children, not passing by any one, that they know, without kind salutations; and if they happen to espy any friend which comes out of the Country, besides their kind greeting, his first question will be to ask him, whether he hath dined or supped; which if he hath not, he will carry him to a *Tavern*, and give him a treatment of *Flask, Fowle and Fish*; and if he hath din'd, a collation of *Fruits and Conserve*.

They are also very costly in their *Feasts and Entertainments*, as in variety of *Meats, Fruits, Preserves*, to which may be added other delights; as *Musick, Singing, Dancing, Plates*, and other pastimes. And for persons of quality they observe more state, some *Feasts* lasting about 15 or 20 days.

They have several days which they make great account of in *Feastings* and merriments, but above all others, their *New years day*, which is in *March*, where also their *Priests* are present at their rejoycings, adding to the solemnity of the day *Sacrifices* which they make to their Gods.

In their *Marriages* they are also very expensive in their *Feasts*; for the *Bridegroom* receives no other Portion from her friends, then what they bestow in their entertainments; but on the contrary, he gives her a Portion, which he gives to her friends in thankfulness for their care in her education.

The *Chinois* may be held as *Pagans and Idolaters*, not knowing the true Religion; but worshipping *Idolls*; they invoke the *Devil*, they hold the immortality of the *Soul*, and after this life it goeth to eternal bliss, or torment; they also hold a kind of *Purgatory*, and that their friends and relations upon their prayers and supplications, may have some ease, for which purpose they have a day set apart for the performing of this ceremony. They have four orders of *Religious men*; they observe all one fashion, but are distinguished by their colour; they all shave their beards and heads, they make use of *Beads*, and say their *Matins, &c.* as the *European Monks* do. *Mandelsloe* saith that they are much addicted to incantations and charms, not doing any thing of concernment, without they have first consulted it by their charms; and if they prove not according to their desire, they will rail and abuse their Gods, with scurrilous language, fling them down, beat them, whip them, and tread upon them; but when their choler is asswaged, they will cogg with them, give them good words, and pretend sorrow; and if the charme favour them, then they offer to them *Geese, Ducks, boiled Rice, &c.* These charms are commonly two small pieces of wood, one side being flat, and the other, being hallow, which they fling upon the ground; and if it happen that the round side of both, or of one is downwards, they take it for an ill omen; if uppermost, for good. They believe that all things visible and invisible were created by Heaven, who by *allcegerent* governs the Universe, another who governs all *Sublunary* things; they also add three principal *Ministers*; one looks to the production of *Fruits*, and the generation of *Men and Animals*, another governs the *Air*, and causeth *Rain, &c.* and the other governeth the *Waters and Sea*.

Mandelsloe saith also, that at their *Funerals* they have several ceremonies; as soon as any person is deceased, they wash his body, put on his best Clothes, and set him in a Chair, where his Wife, Children, and other Relations kneeling down about him, take their leave of him, which done, they put him into the Coffin, set it upon a Table, covering him with a Winding sheet, which reaches to the ground, on which they draw the Picture of the deceased, where they leave him 15 days, during which time in some other Room they set on a Table *Wine, Fruit and Lights* for the *Priest* who watcheth; after which time they carry the Corps to the Burial place, his Relations commonly mourning for a Year.

The Government of the Kingdom or Empire of *China* is wholly at the power of the King, either to change, take away, or augment Laws, when and as oft as he pleases; yet doth he not execute any rigorous Laws upon them, scarcely acting or imposing any thing upon his Subjects, without the Advice of his Council of State; besides this Council of State, he appoints others, as well for the

Their Religion
and belief

Their funeral
Ceremonies.

The King gov-
erns by his
own Will.

the Administration of Justice, as for the oversight of other affairs in the Kingdom; but they neither inflict any punishment to Criminals, or determine any thing of themselves, but make their report to the King, who decides the same.

They are very circumspect how they condemn any person, not passing their sentence, till the offence is found so clear and evident, that the offender is not able to justify himself, they use fair means first for the finding out of the truth; and if that will not do, they then inflict several tortures upon them; their executions are various and more cruel according to the offence committed; some being hanged, some they impale, some they burn; their greatest punishment is inflicted on thieves, which they much abhor. Debtors they imprison; for which purpose there being so many, there is in every great City several Prisons, in which they are strictly kept and lookt unto; by reason of which that their lives may not be burthenome unto them, they have in their Prisons, *Gardens, Courts, Walks, Fish-ponds, Drinking-houses and Shops*, which furnish the Prisoners with such things as they have occasion for.

The Dignity of the Crown of *China* is hereditary, falling to the eldest Son of the King after his decease; the King they highly reverence, calling him the Son of Heaven, the Son of God, or the like, not that they think him so, but being the chiefest of men, they esteem him dear to the Gods, and as a gift of Heaven.

The *Chinois* have many Books and descriptions of their Kingdom: observing exactly all that their Provinces particularly possess: what is the extent, quality, and force of each, how many Cities they have, how many Officers, how many men which study, how many which bear Arms, who pay Tribute, and a Thousand particularities; of which however writers have recounted to us but few things, scarce can we gather the Names of the sixteen Provinces, and of some Cities and Rivers; these Names being so diverse in several Authors, that it is a difficulty to reconcile them; we will say something of them giving them those names which seem to us best received.

CHINA is divided into two principal parts, Northern, and Southern: there are six Provinces in the Northern part, and ten in the Southern. The River *Jamchucuan* traverses these; and the River *Caramoran* those. Of the six Northern parts, three are washed by the Sea, as *Leaoton, Pequín* and *Scianton*, and of these three, the two first touch the great Wall or Mountain; the three other Provinces are on the firm Land; as *Sciensi, Sciensi, and Honan*, likewise of these three, the two first touch the great Wall; amongst the ten Southern ones, there are six on the Sea; three towards the East, as *Nanquin, Checquian, or Aucheo and Fuquien*; and three towards the South, as *Canton, Quancy, and Yunnan*; the other four Provinces are up in the Land, and are called *Chiamsi, Huquan, Suchuen, and Quicheu*. And of these Provinces in order.

The Province of *LEAOTON* is almost quite separated from the rest of *China*: Its chief City bears the same name; this City, as also most of the Cities in *China*, is well built, and of one form being square, and with good Walls made of *Brick*, and plaistered over with *Porcelain*, which renders it exceeding hard and strong; they are commonly broad, and having the benefit of several Towers, as well for beauty as defence. Its Soil amongst other things produces the Root *Ginsen*, which preserves the well in health and strength; strengthens and restores health to the sick; they sell it commonly at double its weight of *Silver*. Its *Inhabitants* are less civilised then the rest of *China*, but more robustious and proper for War. Its other places of most note are *Riched, and Chincheo*, and both seated on the Sea.

The Province of *PEQUÍN*, though of great fertility, yet by reason of its popu usef, occasioned by the residence of the Kings of *China* in its principal City to *Xumhienfu* by us called *Pequin*, makes it that it cannot furnish *Wheat, Rice*, and other Provisions enough for its *Inhabitants* and resort of People; which defect is supplied from the adjacent Provinces. The City of

P p 2

Xumhienfu

Kings of china
hereditary.

The division
of China into
Provinces.

Province of
Leaoton des-
cribed.

Province of
Pequin, and its
chief places.

Xanthienfu of *Pequin* is of a vast bigness, containing within its Walls (made of *Free-stone*, and strongly fortified with *Bulwarks*) which are in circumference near 30 Leagues, about 3300 *Pagodas* or *Temples*, wherein are continually sacrificed a great number of *Wild-Beasts* and *Birds*: These *Pagodas*, especially those of the Order of the *Menegrepos*, *Conquians* and *Talagrepos*, who are the *Priests* of the 4 Sects of *Xacu*, *Amida*, *Gizan* and *Canon*, are sumptuous Structures. To the Wall which encompasseth this City, for the convenience of its *Inhabitants* are 460 Gates, to each of which is joynd a small Fort where a Guard is continually kept, as also a Register, to take the names of all Persons that pass thereat. The Streets are long, broad, and well composed, and its houses fair and lofty; each of the chief Streets having its *Captain* and other *Officers*, who are to look after the same, which every night are shut up by Gates. Here are about 120 *Aqueducts* or *Canals*, which traverse the City, upon which are near 1800 fair Bridges, sustained on Arches. Without the City in a tract of 7 Leagues long and 3 broad, are about 80000 *Tombs* of the *Mandarins*, which are small *Chapels*, richly beautified, nigh unto which are about 300 great *Palaces*, which they call the *Houses* of the *Sun*, which are inhabited by those that can no longer bear *Armes* for the *Emperour* of *China*; either through age, sickness or other infirmities. Also here are about 1300 stately *Houses* inhabited by *Religious Men* and *Women*. There are several Streets of a great length, only possessed by People of one profession, as one by near 14000 *Taverns*; another by innumerable many *Courtizans*, and another by about 24000 *Car-men*, which belong to the *Emperours* *Painturers*. Here are also 32 great *Colleges* for those that study the *Laws*. Likewise there are abundance of large *Houses*, with spacious inclosures of *Gardens*, *Woods*, provided of *Game*, near this City, which said *Houses* or rather *Inns*, serve only to give entertainment to people of all degrees, by seeing of *Plates*, *Combates*, *Bulbaitings*, &c. and the *Palace Royal* of the *Emperour*, which is in this City for its largeness, fairness and richness, is not inferior to any in the *East*; this City being his residence for the Northern Provinces, as *Nanquin* is for the Southern.

And thus much for the City of *Pequin*; its other chief places are, first, *Tianchebooy*; secondly, *Himpin*; and thirdly, *Ciebio*, seated on a fair River about 70 Miles from the *Sea*.

The Province of *Scianton*, its fertility, &c.

The Province of *Sciassu*, its fertility and chief places.

The Province of *SCIANTON*, is between that of *Pequin* and *Nanquin*; it is well watered with Rivers, which makes it very fertile, abounding in so great plenty of all sorts of *Flesh*, *Fowl*, *Fish*, *Grains*, *Fruits*, &c. that its *Inhabitants*, which are esteemed about seven Millions of Persons, cannot devour the encrease but are forced to furnish other Provinces; they have also great store of *Silk*, and other rich *Commodities*. It hath several great Cities, the chief of which are, 1 *Xanton*, not far from the *Sea*; 2 *Pamnthu*, 3 *Cincoyan*, and 4 *Linceu*, seated in an Isle so called: Besides which, here are found in this *Sea*, 9 other Isles, most of which do belong to this Province, and are well known, affording many of the *China Commodities*.

The Province of *SCIANSI*, which *Purchas* calls *Cansas*, hath many *Mountains*, by reason of which it is not so fertile, as that of *Pequin*; neither is it so large, so populous, nor so pleasant; yet with the industry of the *Inhabitants*, it produceth *Corn*, *Rice* and *Mayze*; but in recompence it breeds great quantity of *Cattle*, and hath so many *Vines*, that it furnishes the whole Kingdom with *Pickled Grapes* and *Raisins*. It hath likewise two sorts of *Mines*, the one of *Brinstone*, the other of *Stones* which burn, and may be called *Coals*. In the *Sulphur Mines* they make little holes, to draw out heat enough to boyl any thing they need. The *Mines* of *Coals* are inexhaustible, encreasing from time to time: and these *Coals* well prepared, will keep fire day and night without being touched.

In this Province are about 60 Cities and great Towns, six of which are of considerable note; as, 1 *Sciassu*, 2 *Taven*, 3 *Lugan*, 4 *Talong*, 5 *Pingans*; 6 *Sushio*; all which are well built and very populous.

The

The Province of *SCIENSI* or *XEMSI*, which *Purchas* calls *Soyohin*, *Mendoza*, *Sinsay*, is the most Westward of all the Six Northern Provinces, and the greatest of all the 16 Provinces; *Siganfu* is esteemed its chief City; the great *Mountain* and *Wall* doth bound it from the *Tartars*; the *Soyl* is dry, yet yields good store of *Wheat*, *Mayze* and *Barley*, but little *Rice*; it feeds much *Cattle*, and the *Sheep* are sheared thrice a year, in *Spring*, *Summer* and *Autumn*; their first shearing is the best: It yields *Musk*, which is the *Navel* of a *Beast*, of the bigness of a *Hinde*. They have *Gold*, which they gather amongst the *Sand* of the *Rivers*; for the *Mines*, though it hath some, yet they are not open. It produceth divers *Perfumes* and *Rhubarb*, which they carry into *Persia*, and other places: And it is through this Province, that the *Caravans* come from the *West*.

This Province is very populous, and is well stored with great Towns and Cities, having 8 great Cities, as, 1 *Siganfu*, its *Metropolis*, afore spoken of, 2 *Jengun*, 3 *Pingleang*, 4 *Pichin*, 5 *Lynyao*; with a great many of less note.

The Province of *HONAN*, which *Purchas* calls *Oyman*, is very fertile, and the Climate very temperate; the freest from *Mountains*, and the farthest from the *Sea*. It produceth the best *Fruits* in the World, as well those known to us in *Europe*, as others; and that in so great quantity, that they are scarce valued. The *River* of *Caramoran* after having divided the Provinces of *Sciassu*, and *Sciensi* takes its course through the middle of *Honan*, and discharges it self into the *Sea*, by the Province of *Nanquin*. It comprehendeth 7 great Cities, the chief of which bears the name of the Province; its other chief places are, 1 *Temichio*, 2 *Caifung*, 3 *Nanyang*, and 4 *Chinchio*, besides about One hundred less ones, all well inhabited. Hitherto we have surveyed the six Northern Provinces of *China*; we come now to the 10 more to the South.

The Province of *NANQUIN* is the fairest and richest, and its *Inhabitants* the most civilised of all the Kingdom; and the Kings of *China* did always make their residence at *Nanquin*, till of late they have made it at *Pequin*. It comprehends 14 great and fair Cities, viz. 1 *Umthienfu* or *Nanquin*, which is the *Metropolis* of the Province, 2 *Chichou*, 3 *Luchen*, 4 *Fumiam*, and 5 *Zanuchi*, all which are very populous; some of which have about 200000 people, which only work in making of *Calicces*; All which are commodiously seated on arms of the *Sea*, which make several Isles. And beside these Cities, there are about 100 small ones of less note: I shall only speak something of *Nanquin*.

Umthienfu or *Nanquin*, as we call it, yet ceases not to be the greatest, fairest and richest City of the whole Kingdom, next to *Pequin*. The form and Symmetry of its *Buildings*, in its *Palace*, in its *Temples*, in its *Gates*, in its *Towers*, and in its *Bridges*, as likewise in its publick and particular *Houses*, and their *Ornaments*, are wonderful. It is situate upon the *River* of *Batampina*, and upon an indifferent high Hill; so that it commands all the Plains there adjacent. The circumference is 8 Leagues, 3 long, and 1 broad, all encompassed with a strong *Wall* of hewed *Stone*; about which there are 130 *Gates*, at each of which there is kept a *Porter* with two *Halberdiers*, whose Office is to take the names of every one that passes every day in and out; and besides the strong *Wall*, there are for further defence 12 *Forts* or *Citadels*. In this City there are accounted above 800000 *Houses*, besides 80000 *Mandarins*, *Houses*, 60 great *Market places*, 130 *Butchers* *Shambles*, each containing about 80 *Shops*, 8000 *Streets*, whereof 600 are fairer and larger than the rest; all which are broad, straight and well disposed, and are compassed about with *Ballisters* of *Copper*. The *Houses* are about two stories high, and built of *Wood*, except those of the *Mandarins*, which are composed of *Hewed Stone*, and encompassed with *Walls* and *Ditches*, over which they have *Stone Bridges*, with rich *Gates* and *Archches*. The *Houses* or rather *Palaces* of the *Chams*, *Auchacs*, *Aytans*, *Tutans*, and *Chumbims*, which are *Governors* of the Kingdoms or Provinces of the Empire of *China*, under the *Emperor*, are stately Structures of about 6 or 7 stories high, and richly adorned with *Gold*, in which are kept their *Magazines* for *Arms*, *Ammunition*; as also their *Treasuries*, their *Wardrobs*, and their *Fine* For.

The Province of *Sciensi* described.

The Province of *Honan*, and its chief places.

The Province of *Nanquin* described.

The City of *Nanquin* described.

Porcelain, which by them is so highly esteemed. Here are about 2300 *Pagodes*, a thousand of which were *Monasteries* for Religious Persons, which are exceeding rich. Here are also about thirty great *Prisons* which will contain about two or three thousand Prisoners a piece. Also a great *Hospital* for the relief of the Poor. At the entrance of every principal Street, for the security of the *Inhabitants*, there are *Arches* and *Gates* which are kept shut every night; and in most of the chief Streets are pleasant *Fountains*.

In this City there is accounted about ten thousand Trades, for the working of *Silks*, which from thence are sent all over the Kingdom; which at every *New* and *Full Moon*, amongst divers other *Commodities*, are vendid at *Fairs* in several places of the City. Its Traffick and Commerce bring thither so great a multitude of People, that its Streets are scarce able to be pass'd for the throng. Its *Commodities* and *Manufactures* are in so great esteem, that they utter better than others; and all the neighbouring Countries make a great number of *Manufactures*.

The Revenue which the King receives from this Province is exceeding vast, the *Inhabitants* paying into his *Exchequer* Sixty Millions of *Crowns* yearly; besides great *Excises* upon all *Commodities*, if *Mandelloe* may be believed; and if he receiveth so much out of one Province, judge what a vast Revenue he hath from all the *Provinces*, many of which are no ways inferior to this.

The Province of *CHEQUAN* which *Purchas* calls *Esfram*, passes likewise for one of the best *Provinces* of *China*. The pleasant Rivers which run through it, and the many good *Ports*, with its Isles it hath on the Coast, doth facilitate the utterance of its *Merchandizes*; and particularly, both *Raw Silk*, and prepared in *Thread*, and in *Stuffs*, which it distributes to the other *Provinces* of *China*, and throughout all the World; the other *Provinces* of *China*, not having enough for their use. Of this *Silk* there is one sort which is reserved to be employed in divers works mixed with *Gold*, with great art and curiosity, and those are only for the Kings *Palace*. This Province hath about seventy Cities, of which six are of considerable note, as 1 *Quinsay*, now called *Hamceu*, once the *Metropolis* of *China*; 2 *Liampo*, a fair City seated on the Sea; 3 *Aucho* also commodiously seated on the Sea; 4 *Scanutamu* an In-land City, 5 *Chequian* also an In-land City, but fair, well built, and frequented; and 6 *Succu*, seated on the Sea, and about 25 Leagues from the City of *Nanquin*.

All which are fair, strong, well built, and very populous Cities, but not comparable to *Quinsay*, of which a word or two.

Quinsay or *Hamceu*, as I said before, was once the *Metropolis* of *China*, being (if we may give credit to *Authors*,) 100 miles in circuit, and having in the midst thereof, a *Lake* of about 30 miles in compass, in which are two fair Islands, and in them two stately *Palaces* adorned with all necessities, either for Majesty or Convenience; the City having variety of stately *Palaces*. Its *Houses* as well private as publick, are fair and well built, having abundance of *Pagodes*, the Streets large, well ordered and paved with *Free-stone*. To this City are said to be long about 10000 Sail of great and small Vessels, which are inhabited by People, who there negotiate their affairs, and remove from one place and City to another, as their occasions serve them. There are said to be in this City about 15000 *Priests*, and besides the vast number of *Inhabitants*, there are about 60000 persons which are employed in working of *Silk*. But this City, since *Pequin* and *Fanquin* are become the Residence of the King and Court, hath much lost its former splendor.

This Province is observed to have a great number of *Temples* magnificently built, and the *Lake Sibn* bordered with stately *Palaces*, and encompassed with *Hills* covered with *Trees* and rare *Plants*. A place so pleasant and delightful, that the greatest and richest of the Province pass here their time, and expend their goods.

There are also in this Province whole *Forests* of *Mulberry-trees*, by reason of which they have the greatest product of *Silk*, of any Province in *China*; which they furnish several Kingdoms with, as well in *Europe*, as in *Asia*.

Along

The Province of *Chequian*.

Its chief places

The City of *Quinsay* described.

Along the Coast of this Province are seated several Isles, some of which are very considerable, as *Mochosa* and *Sunkiam*, which is about 25 Leagues broad, and as many long; high to the shore of which several others, but of a lesser bigness. Its other Isles, are 1. *Suan*. 2. *Olepio*. 3. *Avarella*, and 4. the Isles of *Chuposi*, which are a body of several small Isles.

The Province of *FUQUIEN* is not so fertile as *Chequian* and *Canton*, between which it is situated. Its *Inhabitants* endeavour to repair that default by their Trade with Strangers, and principally with *Japan*, the *Philippines*, *Fermosa* or *Fair Island*, which is directly opposite to their Coast. The Earth produceth *Gold*, *Iron*, *Steel*, *Sugar*, *Calamba*, *Spices*, *Drugs*, *Quicksilver*, *Precious Stones*, *Fruits*, *Grains* and *Cattle*; also *Silk* and *Cotton*, of which they make divers *Manufactures*, as also they make all sorts of *Paper*.

There are in this Province several Cities of note, but its chief are 1. *Forbeu*, seated on a fair River not above 17 Leagues from the Sea; 2. *Chincheo*, also commodiously seated on a fair River or Arm of the Sea, from which it is distant about 10 Leagues, 3. *Tenping*, 4. *Chining*, and 5. *Hingboa*.

The *Inhabitants* of *Fermosa* are almost all *Savages*, the *Spaniards* have built one *Fortress* on the East side, and the *Hollanders* another on the West side and towards the Continent, which they call *Zealand*. The Air is temperate, and healthful, which makes the Province become very populous; and along the Coast are seated several Isles, as *Languin*, *Baboxin*, &c.

The Province of *CANTON* or *QUANTUNG*, though one of the least Provinces of *China* in extent, yet by the reason of the goodness of its *Soyl*, and the convenience of its situation, being the first that presents its self to those of *Europe*, *Africa* and *Asia*, which come to *China*, it abounds in *Wheat*, *Rice*, and other *Grains*, *Sugar*, *Gold*, *Precious Stones*, *Peabls*, *Steel*, *Quick-silver*, *Silk*, *Salt-Peter*, *Calambac-wood* and *Copper*, *Iron* and *Tin*, of which they make curious Vessels, which they varnish with *Charam*, and which are brought to *Europe*. They make also the Barrels of their *Guns* in that nature, that though they are never so much laden, yet they do not break.

The *Inhabitants* are very civil, industrious and ingenious, but they are better in imitation than invention; being in the first so great masters, that there is no rarity or manufacture whatsoever that comes to their sight, but they will exactly pattern as well as the *Europeans*; and in all manner of *Goldsmiths* work they far exceed them.

In this Province are observed to be three things which are not in the other Provinces, that is, Men which spit *Blood* continually; *Mountains* without *Shrub*; and *Trees* always green.

In this Province are about 80 Cities both small and great, the chief whereof are 1. *Quangchen* or *Canton*, under which I shall include the Trade of *CHINA*, as being the chiefest place of *Traffick*. It is well built, of great *Traffick*, rich, and very populous; to which the *Portugals* have a great Trade, being commodiously seated on an Arm of the Sea.

2. The Island and City of *AMACAO* is seated opposite to the City of *Canton*, on the North side of a Bay, which is at the mouth of the great River of *Canton*, which issueth out of the Lake of *Quincy*. This place is inhabited by the *Portugals*, intermixed with the natural *Chinots*; their particular Trade is with the City of *Canton*, which may be counted the Staple of all the *China Commodities*, whether they are permitted to come twice a year; at which time there are *Fairs* kept for the vending of their *Commodities*, which they carry to *Malacca*, *Goa*, and so into several parts of *Europe*. But though they are admitted the liberty of Trade, yet are they denied the freedom of lying in the City at nights, neither to enter the Walls without setting down their names in Books, which are kept by persons at each Gate for the same purpose, when they depart at night, they go out.

Its other chief places are 1. *Xangai*, a Maritime City, 2. *Lanching*, also seated on the Sea, very commodious for *Traffick*, and opposite to the Isle of *Aynan*, from which it is distant about 5 Leagues, 3. *Lampaca*, also seated upon the Sea, and 4. *Nanbium* seated far within Land, and among the *Mountains* which parts this Province from *Chiamfi*.

The Province of *Fuquin*. Its Commodities and chief places.

The Province of *Canton*, its fertility, commodities, &c.

Its Inhabitants.

Three things noted in this Province.

Its chief places

The Isle and City of *Amacac* and its Trade.

Others that are permitted to come twice a year.

**The Province
of Huqnam, and
its Commodi-
ties.**

The

Besides the Isles already spoken of, here are about the Coast of China several others, as the Isle of Corey in the Gulph of Nanguin, of good account, and well frequented, affording many of the China Commodities. It is of a large extent, being 100 Leagues in length, and about 50 in breadth. Its chief places are, *Tausem*, seated on the Northern part of the Isle, regarding the Province of *Leaton*; from which it is parted by a Straight or Gulph not above two leagues broad. 2. *Corey*, seated on the Gulph of *Nanguin*, Southerly. *Tajoran*, also seated on the Sea Eastwards; and on the South of this Isle are seated a Body of several Isles, called the Isles of *Larrons*. Likewise the Isles of *Fuego*, *Legueio Grande*, *Les Roys Mages*; the Isles of *Peschours* or *Pishers*; of *Pakan* or *Formosa*; of *Tahao Miguel*, and *Tabaco Xima*.

The Province
of *Quichen*, and
its chief pla-
ces.

TARTARIA may be considered, as it is divided into the Parts of

TARTARIA DESERTA,

USBECK, or ZAGATHAY, with its Provinces or Parts of

Usbeck, particularly so called,

Sack,

Sogdians,

TURQUESTAN, with its Kingdoms or Provinces of

Chialis,

Chinchintalas,

Cascar,

Thibet,

Cotam,

Clartiam,

CATHAY, with its Kingdoms or Provinces of

Tainfu,

Tenduc,

Egrigaja,

Tanguth,

Ergimul,

Serguth,

Belgian,

Mongul,

Molsir,

Tartar,

Bargu,

Carli,

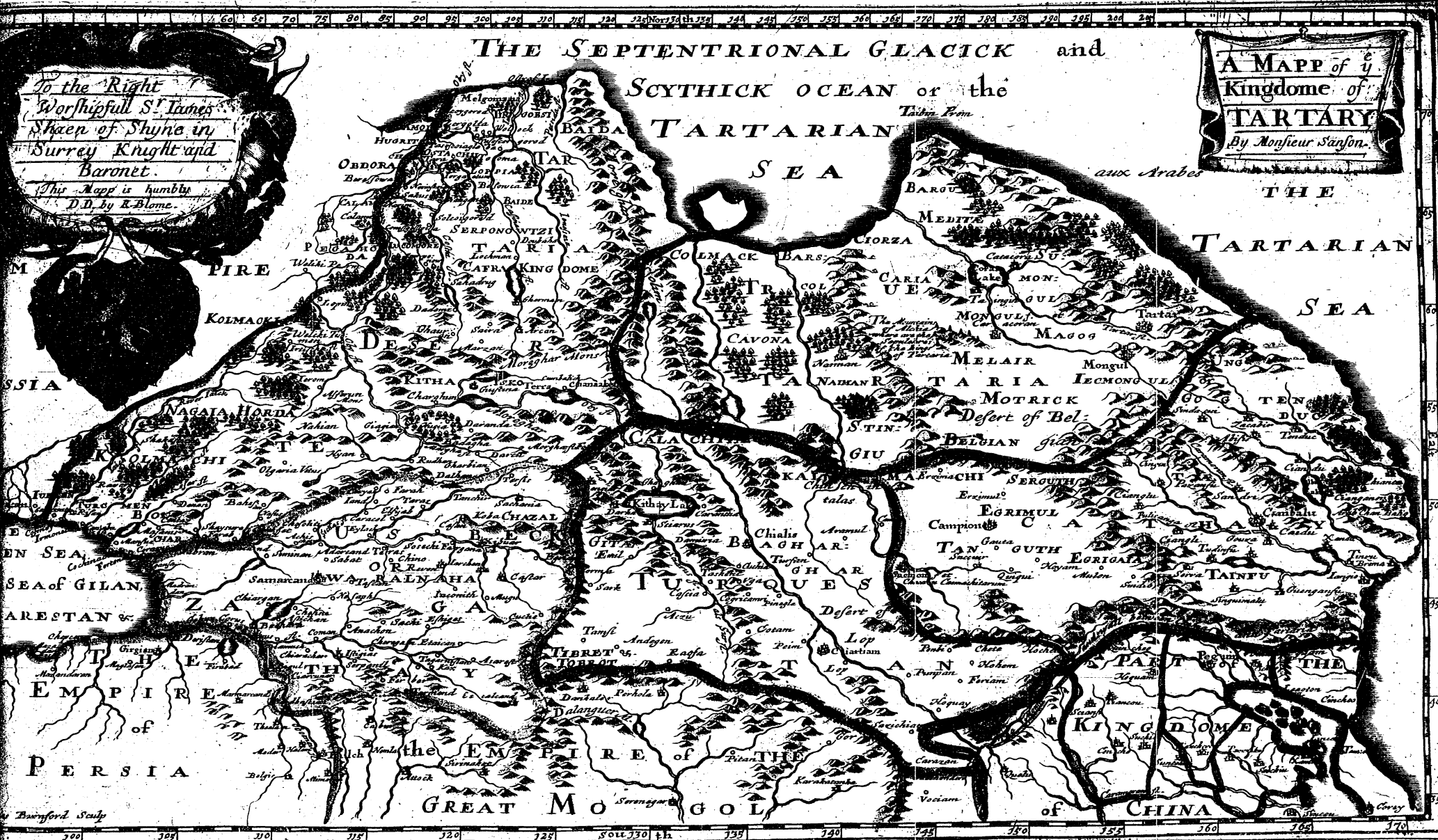
Naiman,

Cavona,

Colmack,

True TARTARIA, with its Provinces or Hords of

Cumbalich,
Glufins,
Jerom,
Rifan,
Frutach,
Centaz,
Rifan,
Davafi,
Caracus,
Jarchan,
Samarcand,
Nefaph,
Mogalachfu,
Horne,
Xibuar,
Reven,
Targama,
Teras,
Sachi,
Tanchit,
Terfis,
Sachania,
Sachi,
Iltigias,
Buddaschan,
Bigul,
Coman,
Termend,
Ecalcand,
Sermegan,
Alfareff,
Kax,
Etalcan,
Nefaph,
Bachars,
Pogania,
Madrandan,
Caraffar,
Zahaspas,
Corus,
Chiargan,
Corfim,
Becher,
Siminan,
Canz,
Chesolitis,
Caracol,
Chialis,
Turfan,
Cuchis,
Uga,
Camul,
Aramul,
Emil,
Sark,
Cafia,
Taskent,
Andegen,
Rafsa,
Tamafi,
Coram,
Pinegle,
Cogricamri,
Feim,
Clartiam,
Lop,
Sazechiam,
Carazan,
Vociam,
Cambala,
Achbaluch,
Tiazu,
Xandu,
Caidu,
Gouza,
Teuduc,
Zambir,
Ciandu,
Ciangli,
Tudinfu,
Serre,
Suidio,
Mulone,
Sachion,
Quiqui,
Hoyam,
Gauts,
Campion,
Ergimul,
Erzina,
Belgian,
Mongul,
Caracorau,
Tartar,
Catacoran,
Taingia,
Naiman,
Cavona,
Colmack.



To the Right
Worshipfull S^t James
Shaep of Shyne in
Surrey Knight and
Baronet.
This Map is humbly
D.D. by A. Blome.

A MAPP of
the
Kingdome of
TARTARY
By Monsieur Sanson.

THE SEPTENTRIONAL GLACICK and
SCYTHICK OCEAN or the
TARTARIAN SEA

THE
TARTARIAN
SEA

GREAT MONGOL

Barnford Sculp

TARTARY.

TARTARY, or *TARTARIA*, is seated in the most Northern part of all *Asia*, and extends itself from East to West, from the River *Volga* and *Oby*, which separates it from *Europe*, unto the Streight of *Jesso*, which separates it from *America*; and from South to North, from the *Caspian Sea*, the River *Gebon*, and the Mountains of *Caucasus* and *Ussate*, &c. which divides it from the more Southernly part of *Asia*, unto the Northern *Frozen* or *Scythian Ocean*.

It reaches in length from the 19th unto the 180th degree of *Longitude*, which is the half of our *Hemisphere*; and in breadth, from the 35th or 40th unto the 70th or 74th degree of *Latitude*, which is half the breadth of all *Asia*; So that it may contain 1500 Leagues from West to East, and 7 or 800 from North to South.

Its position is almost entirely in the *Temperate Zone*; nevertheless its more Southern parts being in the midst of this *Temperate Zone*, and the rest advancing to the *Cold* or *Frozen*; and its Southern parts being almost all bounded with very high Mountains, which keeps off the heat of the mid-day Sun, and renders it more cold towards the North; We may say, that *Tartary* in general hath its temperature much more cold than temperate.

Its Neighbours are the *Moscovites*, on the West; the *Persians*, the *Indians* or the *Mogolls* and the *Chinow*, on the South; the rest is washed by that Sea of which we have little knowledge; some place towards the East, the Streight of *Anan*, which should separate it from *America*; others, the Streight of *Jesso*, which divides it from the Land or Isle of *Jesso*, which is between *Asia* and *America*, as we shall declare after *Japan*. Some esteeming the *Northern Ocean* in one manner, and some in another.

The name of *Tartaria* is apparently taken from the River, *Quarter*, or *Hord* of *Tartar*; from whence these People being issued, have over-run and made themselves known in all parts of *Asia*. Others take it from the word *Tatar* or *Totar*, which in the *Syniack* signifies *Remnant* or *Forfaken*; because they esteem them the *Remnant* of the *Jews*, of which *Ten Tribes* were transported into *Media* by *Salmanazer*. They must then add, that these *Ten Tribes* passed from *Media* into *Scythia*, which is not observed by the Ancients. However it be, the *Persians* yet call this Country *Tartar*, and its People *Tatars*; the *Chinow*, *Tagus*.

The People which possess this Country differ something from one another, as well in *Personage*, as in *Religion* and *Manners*; but for the most part they are of an indifferent Stature, ugly Countenances, thick Lips, hollow Eyes, flat Noses, broad Ears, very strong, stout, valiant and good Warriors; very active, vigilant, and exceeding quick of Foot; patient in all Afflictions; they are very rude, barbarous and revengeful, not sparing their Enemies, whom in revenge they kill, first letting out their Blood, which they keep, using it as *Wine* on their Feasts.

Their Habit is very mean, which is for the most part made of coarse stuff, which reaches but to their Knees; yet are they very proud, despising all other Nations, and thinking their *Cham* to be the greatest Prince in the World; whom they greatly fear and reverence, being no better than his Slaves. They are very nasty and stuttish, much given to drink, of a treacherous and thievish nature.

Tartary, its

extent

Its length and breadth

Its Position

Its Neighbours

Its Name, why so called

Its Inhabitants

Their Habits

The People, the manner of their speech

Religion.

In matters of Religion, they are generally *Pagans* and *Mahometans*, which about the year 1246. crept in amongst them, which since hath spread it self over their Country, and intermixing with *Paganism*; yet hath it not so much prevailed as to extinguish *Christianity*, which was first planted amongst the *Scythians* (which were the Ancient people of *Tartary*) by the preaching of two of the Apostles, St. *Philip* and St. *Andrew*, which of latter years hath much lost it self, and not only by the prevailing of the *Nestorian* Sect, but chiefly for want of instructing the People in the true Orthodoxal points of *Christian Religion*.

Dyct.

Their Food is mean and very fluttishly drest; yet use they entertainments, and refuse nothing but *Swine's flesh*, and eat all without *Salt*. They are much given to *Hawking*, and other Sports; but not much to Arts or Literature: The *Women* are much of the nature with the *Men*.

The form of Government.

The Government (as *Heylin* observeth) is Tyrannical, their great *Cham* or *King* being Lord of all; in whose breast lieth their Laws, taking the Estates and Lives away of whom he pleaseth; whom they so much reverence, that they call him the *shadow of Spirits*, and Son of the *Immortal God*, and esteem him the Monarch of the whole World. In their execution of Justice they are very severe, punishing every small offence with sudden death. His Revenue without doubt must be very great; for besides the sole trade of *Pearl-fishing*, which upon pain of death none dares to fish for; besides those employed by him; also all the *Gold* and *Silver* that is either found in, or brought into the Kingdom, he doth assume to himself; as also the Tenth of all things that the Country doth produce; and also what else he thinketh fit, as being (as I said before) Lord over them all.

The Revenue of the Cham.

Here the Men have the liberty of 2 or 3 Wives, which they never choose but out of their own Tribe: and every Tribe hath a Chief, who is one of the Nobility of the Country, and carries for his Banner a *Horse's Tail* fastned to a *Half-Pike*, and died of the colour belonging to his Tribe.

Their Forces.

As concerning the Forces that the Great *Cham* is able to raise, they may be supposed to be very great, by that which may appear by *Tamerlanes* Army, which consisted of a 1200000 Horse and Foot; besides, if we consider what a disturber he hath been, and how he hath enlarged his Territories of his Neighbours, as the *Chinois*, the *Moscovites*, &c. we may judge him powerful; but as his power is great on Land, it is as weak by Sea, scarce being Master of any *Ships*, and as little doth he regard them, though other Princes esteem them as a great security to their Kingdom.

Tartary divided into parts.

I shall divide *Tartary* into five principal Parts; which are, *Tartaria* the *Desart*, *Usbeck* or *Zagathay*, *Turquestan*, *Cathay*, and the True *Tartaria*; the first and last are the most Northern, barbarous, and unknown. The others more Southerly, are better civilized and known, having abundance of fair Cities, and driving a good Trade.

TARTARIA the *Desart* answers to the ancient *Scythia intra Imaum*; *Usbeck* or *Zagathay* to the ancient *Bactriana* and *Sogdiana*; both the one and the other new Name retaining, in my opinion, something of the ancient; *Sogdiana* of *Zagathay*, and *Bactriana* of *Usbeck*: *Turquestan* to the ancient *Scythia extra Imaum*; *Cathay* is the *Serico Regia*. As for the True *Tartary* it is unknown unto the Ancients, or at least it holds the most Northern part of the one and the other *Scythia*.

Tartaria Desart, its bounds.

Tartaria Desart is bounded on the West with the River *Volga* and *Oby*, which divides it from *Moscow* on the East, by Mount *Imau*, which separates it from the True *Tartaria*, and from *Turquestan*; on the North by the *Septentrional* Ocean; on the South by the *Caspian* or *Tabaresian* Sea, by the River *Chesell*, and by certain Mountains which joyn themselves with *Imau*, and divide it from *Usbeck* or *Zagathay*. All the Country is inhabited by Peoples or Tribes, which are Troops or Bands which they call *Hordes*; having very few walled places, whither they only retire themselves when forced; for they have no settled stay or abode, but wandering perpetually carrying and driving with them their *Tents*, *Chariots*, *Families*, and all they possess, stopping

Its People, and the manner of their abode.

stopping only there were they find the best food for their Cattel, to which, as also in Hunting and War, they most addict themselves. They Till not the Earth, though it be good and fertile; and hence it is that this is called *Tartary the Desart*. The chief places in this part are; 1. *Cumbalich*, seated on a Lake. 2. *Gurkina*, seated between the two other Lakes, which are conjoined together by a River. 3. *Jerom*, on a branch of the River *Oby*. 4. *Risan*, seated on the River *Jaick*. 5. *Frutach*. 6. *Centan*. 7. *Caracus*. 8. *Organci*, and 9. *Dawasi*. The People that inhabit in this part, have their rise from three several Originals, which are disposed of into many several parts; as, 1. The *Circassians*, which are for the most part *Christians*, and border upon the *Euxine* Sea. 2. The *Samoyeds*, who are altogether *Idolaters*, inhabiting towards the Northern Ocean: and, 3. *Tartars*, which are *Mahometans*, and seated betwixt both the other. And those again are subdivided into divers Tribes or *Hordes*; the chiefest of which are, 1. The *Nagajan Tartars*, which are held to be more fierce and cruel, and better Warriors than the other *Tartars*, but void of all Arts; despising *Money*, or the use of *Corn*, accounting *Mares milk* and *Horse-flesh* their best dyet, which they are not over-curious in dressing, it sufficing if it is only heated, though with the Sun: and this *Horde* paies yet some Tribute to the great Duke of *Moscow*, to whom likewise part of this *Tartaria Desart* belongs. 2. The *Thumenes*, who are also a warlike People, and much addicted to *Divinations* and *Sorceries*. 3. The *Zavolhenses* are very powerful: The *Kirgessi* are also very strong and warlike; they are partly *Gentiles*, and partly *Mahometans*: They care not to bury their Dead, because of their so after removing, thinking never to see them more, and so leaving them hanging upon Trees. The Country is very fertile, if tilled, being fit to produce several good Commodities, and is also very fit for Traffick, having commodious Havens; and if they would addict themselves to it, would soon gain a good Trade with several other Nations.

USBECK, or *ZAGATHAY*, extends it self from the *Caspian* Sea unto *Turquestan*, and from *Persia* and *India* unto *Tartaria Desart*: possessing all that is upon the Rivers of *Chesell*, and of *Geban* or *Albiamu*.

Its People are the most civil and ingenious of all the Western *Tartars*, fierce in War, being strong and active, patient in labour, not much addicted to vices, Theft they punish severely; they have a great trade with the *Persians*, to whom they have sometimes been Subjects, sometimes Enemies, and sometimes in good Intelligence; and with the *Indians*, where they have likewise something to do; and with *Cathay*, where they utter their much prized *Manna*, bringing back *Silk*, which they make into Manufactures, and sell in *Moscow*.

This part of *Tartary* did contain several Provinces: 1. *Zagathay*, especially so called. 2. *Sace*. 3. *Sogdiana*, with some other of less note, in all which are not many considerable Cities, the most famous of which are *Samarcan*, which was both the Cradle and Grave to *Tamerlan* the Great, from whom the Great *Mogolls* boast themselves to be lineally descended, who enriched it with the fairest Spoils of *Asia*, and adorned it with an *Academy*, yet in some repute among the *Mahometans*: Also *Bachara* and *Budascban*, and also *Balick*, according to some; but which I esteem in *Chorasán*, which hath divers times been in the hands of the *Chams* of *Usbeck*. *Budascban* is likewise on the Frontiers of *Ghorasan*, *Bochara* or *Bachara*, where lived *Avicenna* one of the most famous *Philosophers* and *Physicians* of all the East. The Country is of a different Soil; that of *Zagathay* is indifferent fertile, which is much augmented by the industry of the Inhabitants, who are likewise held the most ingenious, being lovers of Arts, and well skilled in Manufactures, by reason of which they have a good trade with Merchants, which come from several places. *Sace* is very barren, and ill manured, and full of wild *Desarts*, *Forrests*, and uninhabited places, by reason of which the Inhabitants remove their Herds of Cattle from place to place, where they can find best food for them. *Sogdiana* hath very rich Pastures, and watered with many good Rivers, which much conduces to its fertility; in which, as also, in *Zagathay*, are several Towns and

The Nagajan Tartars, &c.

Usbeck, its bounds.

Its people. Their trade.

Its parts, chief places and fertility.

The Tale of the Tartars.

Turkistan, its
bounds and
chief places.

Its fertility
and commo-
dities, &c.

Cathay, its
bounds.

Its fertility
and commo-
dities.

Its chief place
Cambalu.

The Great
iching Palace.

Its Trade and
Commodities.

and Cities; as 1. *Jarchan*. 2. *Sachi*. 3. *Istigas*. 4. *Budashan*. 5. *Bachara*: and 6. *Pogansa*, which last is seated on the Sea.

TURQUESTAN lies East from *Ubeck* or *Zagathay*, West from *Cathay*, North from *India*, and South from True *Tartary*. It is subdivided into some Kingdoms, of which the best known are *Cascar*, *Cotam*, *Chialis*, *Giartiam*, *Thibet*, *Chinchintalis*, &c. A part of their chief Cities being of the same name. Some name *Hiarbhan* instead of *Cascar*, and *Turon* or *Turphan* instead of *Chialis*, for the chief Cities of the Kingdom. That of *Cascar* is the richest, most fertile, and best cultivated of all: That of *Giartiam* is esteemed the least, and all sandy, having in recompence many *Jaspars* and *Cassidoines*; but that of *Cascar* hath likewise excellent *Rhubarb*, and in great quantity. Those of *Cotam* and *Chialis* have *Corn*, *Wine*, *Flax*, *Hemp*, *Cotton*, &c. *Thibet* is more advanced towards the *Mogolls* of *India*, and the most engaged in the Mountains of *Imaus*, *Caucasus*, and *Ussontes*. It hath many wild Beasts, *Musk*, and *Cinnamon*; and they make use of *Coral* instead of *Mony*. The Relations which have been given in 1624 and 1626, have made this Estate so great and rich, that they would confound it with *Cathay*: but those of 1651 make the Region very cold, and always covered with *Snow*, esteeming its King wholly barbarous, and less powerful than him of *Serenegar*, who is only a *Rabia* in the Estates of the Great *Mogoll*: so little assurance is there in the most part of these Relations. The other places of note in *Turquestan* are, *Camul*, *Turfan*, *Emil*, *Sark*, *Cassia*, *Andegen*, *Raofa*, *Cotam*, *Peim*, *Finegle*, *Lop*, *Giartiam*, *Sazzechiam*, and *Vociam*; and in this part is the Lake of *Kithay*, which is 65 Leagues in length, and 40 in breadth.

CATHAY is the most Eastern part of all *Tartaria*, and esteemed the richest and most powerful Estate. It is contiguous to *Turquestan*, on the West, to *China* on the South, to True *Tartary* on the North; and on the East is watered by the Strait of *Jessa*.

Some esteem all *Cathay* under one only Monarch or Emperour, whom they call *Chan* or *Uacan*, that is, Great *Cham*; and speak him one of the greatest and richest Princes in the World. Others account divers Kings, but all Subjects to the Great *Cham*. The Country is much frequented, well tilled, and in most places very fertile, abounding in *Wheat*, *Rice*, *Wool*, *Hemp*, *Silk*, *Musk*, *Rhubarb*, great Herds of *Camels*, of whose Hair they make *Chamlets*, and abundance of *Horses*, with which they furnish other Countries, and especially *China*, with what other things can be desired. *Cambalu* is esteemed its Metropolitan City, in which the Great *Cham* resides, pleasantly seated in a fertile Soil, and on the River *Patsyanga*, which hath its course through the City, which is seated in the midst of the Country, being as it were the center to others. This City, besides its Suburbs, is esteemed to be 28 miles in circuit, being as it were four square, each Angle being 7 miles in length, all encompassed with a strong Wall 10 paces thick, to which, for entrance into the City, there is at each Angle 3 Gates, to every one of which there is a Palace; besides in every Angle a more sumptuous Palace, in which the Armour of the Garrison Soldiers are kept, which are accounted 1000 of each Gate. The Buildings are (for the most part) of *Vreestone*, and very proportionably built; the chief Streets large, and so strait, that one may see from one Gate to the other, which gives it a gallant prospect.

In the midst of this City is a stately Palace, where the Great *Cham* resides, together with his *Queens* and *Children*. This Royal Palace is four square, and of a vast bigness, having besides its Out-walls several other enclosures adorned with stately Structures, beautified with pleasant *Walks*, *Gardens*, *Orchards*, *Fishponds*, with several other places for Recreation. His Attendance, State, and Riches, is greater without the Walls, and Suburbs, each 3 or 4 miles in length, and joyning to each of the 12 Gates; and in these Suburbs the *Merchants* and *Strangers* reside, each Nation having a several *Caneer*, *Store-houses*, where they both lodge and exercise their Trade, bartering their Commodities for one another, being of a great Trade, and frequented by *Messengers* and *Strangers* of several Countries, but more especially by the *Persians*, *Chinois*, *Indians*, and

and the *Tartars* themselves, which renders it very populous, it being the chief place for Trade in all *Tartary*, abounding not only in those Commodities aforesaid, but also in the Spices of *India*, the Gems of *Pegu* and *Bengala*, the Drugs of *Arabia*; also the *Carpets*, *Tapestries*, *Silks* and *Manufactures* of *Persia*, &c.

The *Mony* current here, and throughout this large Territory, is very different, neither is it made of *Gold*, *Silver*, or *Copper*, as with us; but of the middle Bark of the *Mulberry Tree*, which being made smooth and firm, they cut round into great and small pieces, on which they imprint the *Kings Mark*, as we do on our *Mony*; and these pieces, according to the bigness and thickness, are valued at a certain rate, and are passable for the buying of all Commodities; and it is deemed death for any one to counterfeit, or make any of this *Mony*. But in some places under the Great *Chams* jurisdiction, they use polished *Coral* instead of *Mony*: and in other places they use twigs of *Gold*, which is distinguished into several parcels by weight, but without Stamp or Character, and this is held in case of great importance: they also use in some places *Porcelain* instead of *Mony*; likewise they make a kind of *Mony* of *Salt*, which they boil until it be congealed hard, and then make it up into round lumps, on which is put the *Princes Stamp*. And these are the several sorts of *Mony* which passeth amongst them; yet by reason of the Trade that this place hath with other Countries there adjacent, their Coyns are here found current, as are those of the *Grand Signior*, as also those of *Moscow*.

Besides this *Palace* aforesaid, he hath another which is esteemed the principal of his abode, which is not far from this City, which Merchants are not permitted to enter; the *Palace* is called *Zaindu*, being four square, and, if Authors may be believed, every Square is 8 miles in length, and within this Quadrant is another, whose sides are 6 miles in length, and within that another of 4 miles square, and this is esteemed the very *Palace* itself, and between these several Walls are stately *Walks*, *Gardens*, *Orchards*, *Fishponds*, *Parks*, *Forrests*, *Chases*, for all manner of pleasures and game, as also several other places for all manner of Courty and Military exercises. This *Palace* is exceeding richly built, having many sumptuous Edifices; his attendance great, 12000 Horse being his daily guard, besides an exceeding great number of other Attendance and Servitures.

The greatest and most potent Parts or Kingdoms of *Cathay*, are *TANGUTH*, whose chief City is *Campion*; where the *Carabans* of Foreign Merchants stop, it not being permitted them to go farther; a City well built, and where the *Christians*, in the time of *Paulus Venerus*, had 3 fair Churches; but of later time have much lost themselves through the great increase of the *Gentiles*, who have here several Monasteries, where they keep and worship their Idols, where they have also several Religious persons only dedicated to their service; and this Kingdom hath much *Rhubarb*. The Kingdom of *TENDUC*, with its City of the same name, furnishes *Cloth of Gold* and *Silver*, *Silks*, *Chamlets*, &c. and it is thought that *Prester John* resided in these quarters; there being yet a particular King, who is a *Christian*, but of the Sect of the *Nestorians*, and subject to the Great *Cham*.

THAINFUR is known for the great number of its *People*, for the excellency of its *Vines*, for the goodness of its *Arms*, and of its *Cannon*, &c. for the rest, all great Travellers count *Marvels*, of the greatness, power, and magnificence and riches of this Great *Cham*; of the extent of his Estates, of the Kings subject to him, of so many Ambassadors always in his Court, of the reverence and respect bore him, of the power and infinite number of his Men of Arms; but it is so far from *Europe*, that we could scarce believe them, till he made seen his power in 1618, having possessed the Ports and Passages of that great Mountain and Wall which separates *Tartaria* from *China*; calling an infinite number of Men into the great Kingdom, taking and pillaging its fairest Cities, and almost all its Provinces, forced the King of *China* to retire himself into *Canton*; leaving him in possession of not above 1 or 2 of its Provinces: But the relations of 1650 gives the King of *China* re-entrance into the greatest part

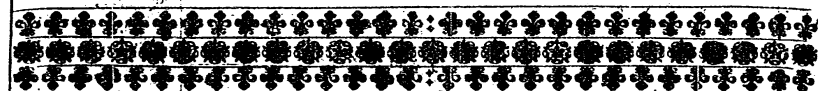
Their Monies

Strength, and
its chief pla-
ces.

Tenduc

Thainfur

The state and
power of the
Great Cham.



THE Oriental Isles

OF

A S I A.

The Oriental
Isles of Asia.

THe Isles of *Asia* are as many in number, and as great, rich, and populous as those of all the rest of the World. They are spread here and there, in the great *Oriental* or *Indian Ocean*, and for the most part about the *Indies*. I shall divide them into 5 Parts or Bodies, and call the Isles of *Japan*, those which are on the East of *China*; the *Philippine* Isles, those which are likewise on the South East of *China*; the Isles of the *Moluccoes*, those which are to the South of the *Philippines*; the Isles of the *Sound*, those which are to the West of the *Moluccoes*; and I put for the fifth *Ceylan* and the *Maldives*, which are East, and South-East from *Cape Comori*, the utmost point of *Malabar*. There are moreover many Isles which belong to *Asia*, but not to compare with these; of which we shall also speak a word as occasion offers.

The Isles of *Japan*, are on this side the *Tropick of Cancer*; the *Philippines* between the *Tropick* and the *Equinoctial* Line; the *Moluccoes*, the Isles of the *Sound*, and the *Maldives*, are about this Line, returning from East to West.

The Isles of JAPAN or JAPON.

The Isles of
Japan.

WE call the Isle or Isles of *Japan*, a certain multitude of Isles, and of different bigness, which are on the East of *China*, distant from it about 100 Leagues; and so are seated in the most *Oriental* part of our *Continent*. They stretch together in length about 300 Leagues from West to East, and from South to North 40, 50, 60, and sometimes 100 Leagues in breadth.

Amongst these Isles there are 3 very considerable. The first and which is much greater than the two others, is called by us *Japan* or *Japon*; by its *Inhabitants*, *Hippon* or *Nippon*, which signifies *The Spring of Light*, or *of the Sun*: A name proper for it, since it lies to the East, and Sun-rising of all *Asia*, and of all our *Continent*. The second is called *Ximo*, that is, a *Low Country* or *Saycock*; that that is, *Nine Kingdoms*. The last *Tokoes* or *Xicoco*, that is, *Four Kingdoms*.

We must likewise make account that these three great Isles are cut asunder by several Channels, which divide them into several Isles; but because these Channels are very narrow, these parts are esteemed pieces contiguous in regard of the others, where the Channels, or rather the Arms of the Sea which divide them, are much larger.

They

The Oriental Isles of A S I A.

They have all those *Fruits*, *Trees*, *Herbs* and *Beasts*, which we have in *Europe*, with several others not known amongst us; as also abundance of several *Fowls*, both tame and wild; the surface of the *Earth* is well clothed with *Woods* and *Forests*, in which are found very lofty *Cedars*; and the bowels of the *Earth* stored with divers *Metals*; as *Gold*, *Silver*, *Copper*, *Tin*, *Lead*, *Iron*, &c. though not so good as in the *Indies*, except it be their *Silver*, which is excellent and abundant. Their *Pearls* are great, red, and of no less esteem than the white ones. These with several *Manufactures* which are here made, are the chief *Commodities* of this Island.

In this Island are several Cities of some note; as 1. *Meaco*, seated in the midst of the great Isle of *Japan*, a fair and large City, formerly 21 miles in compass; but now by reason of their Wars, it is reduced to the third part of what it was, in which the *Jesuites* did formerly esteem it to have 180000 Houses, and judged it to have near 100000 when they were there. This City is the ordinary residence of the *Triumviri*, or the three principal Magistrates, which rule or sway the affairs of these Islands; of whom the first is entitled the *Dayri* or *Voo*, that is, the *Emperor*, who hath the care of *Civil Affairs*; the second is the *Cube* or King of *Tenza*, who is chief of the *Militia*, managing the *Affairs of Peace or War*; and thirdly the *Zazo* or *Xaca*, who is chief in *Religion* and *Sacred matters*. The City is divided into the higher and lower; the one and the other together were not above 20000 paces long, and 8 or 10000 paces large. The *Palace* of the *Dayri* was in the higher City, great, stately and adorned with all things which may add to its luster; and the *Houses* or *Palaces* of his *Conges*, with the *Houses* of the chief *Lords* of all *Japan*, were about that of the *Emperor*. The lower City was almost contiguous to *Fuaximi*, which serves for a Fortrefs to *Meaco*. This City, as most or all those in these Islands, are unwall'd; but its *Streets* in the night are chained up, and a *Watch* of two men at each end of every *street*, who are to give account of the transactions that happen in the night. Its *Streets* are large and well composed, its *Houses* well built, and most of *Wood*; all their *Pagodas* are made of *Wood*, they are neither large nor high; and in these *Pagodas* they have several ill-shap'd *Figures*, to which they address their *Prayers*, and bestow on them great gifts in way of *Alms*, which their *Priests* make use of. *Nobunanga* was the first that lessened this City, which he did by burning a part of it in 1571 and since it hath received divers jostlings of ill fortune. 2. *Amangucki*, a *Maritime* City, and the fairest of the Kingdom of *Nangato*, hath been formerly well known for its Trade, containing few less than 10000 Families. It was burnt in 1555 during some revolt; it was builded again, and again burnt, and afterwards rebuilt. These fires happen often in *Japan*, the greatest part of their building being of *Wood*; but the wood is very neat and curious, marbled; &c. *Nangasacki* was the most famous of the Isles of *Saycock*, and there are a great number of fair Cities through all *Japan*.

Amongst these Cities, that of *Sacay*, on the South of *Meaco*; which *Ferdinand Mendez Pinto* (provided that he doth not lie) says, he hath known not to have depended upon any King or Lord, but was governed of it self, in form of a Republick, created all its Magistrates and Officers; and he assures us, that all the Masters of Families rich or poor, make themselves be called Kings and Queens; and their Children Princes and Princesses. This liberty and vanity is observable if it be true.

Mandellos in his Book of *Travels*, makes mention of a City called *Tendo*, which he makes to be a fair, large, and well built City; in which, he saith, there is a *Castle* about two leagues in compass, being strongly fortified with 3 Walls, and as many Moats. The building is very irregular but fair; having to the Walls abundance of Gates. Within the last Gate, he saith, there is a *Musard* of Arms for 3 or 4000 men, on which all the *Streets* that are fair and broad take their rise; in which said *Streets*, on both sides, are many magnificent *Palaces* for the Nobles. In the midst of this *Castle*, is seated the *Emperor's Palace*, having belonging to it many stately edifices and apartments, as *Halls*, *Chambers*, *Galleries*, &c.

Chief places
Meaco described.The Palace of
the Dayri.The City of
Tendo.

R r 2

Galleries, Gardens, Orchards, Groves, Fish-Ponds, Fountains, Courts, &c. as also several *Select Houses* for his *Wives* and *Concubines*. And here is his ordinary Residence, being in the *Province of Quanto*, about 120000 paces from *Meaco*, between which are abundance of stately and magnificent *Palaces* and *Houses*, for the entertainment of the *Emperor* in his journey between *Tendo* and *Meaco*: But the most beautiful *Palace* next to *Tendo*, is that of *O Jaca* on the Sea, and South of *Meaco*; the buildings of *Tendo*, are so beautified with *Gold*, as well without as within; that at a distance it seems to be rather a *Mountain* of *Gold* than a building.

The Mountains of Japan.

Amongst the *Mountains* of *Japan*, there are two very well known. *Figenojama*, four Leagues from *Meaco*, renowned for its height, which stretches itself above the Clouds; and *Juy* or *Juycan* in the Kingdom *Hiescheu*, which vomits *Fire* in great abundance, as some time did *Etna* in *Sicilia*, *Vesuvius* at *Naples*, and the Isles of *Volcan* and *Strongoli* among those of *Liparia*: And on the top of this *Mountain*, the *Devil*, in a white and shining Cloud, shews himself in divers forms, but only to such of his *Votaries* as live about this *Mountain* an abstemious life, like the ancient *Hermits*, as in Fasting, undergoing many austerities, and compleating the Vow they made for this purpose.

The People of Japan their dispositions.

The Country hath hot and medicinal Waters in several places; the common Waters are healthful; the *Inhabitants* of a good stature, strong and active; in complexion they are inclining to an *Olive* colour, well disposed, judicious, apt to learn, of sound memories, subtle in their dealings, more inclined to *Arms* than *Letters*, though they become perfect in both, having many *Academies* and *Universities*: They are ambitious of glory, patient in affliction, hating *Idleness*, *Gaming*, or all ill-husbandry; as also slandering, swearing, lying, theft, and generally all vices, which they severely punish, and oftentimes to death.

Their *Arms* are esteemed the most excellent of all the *Indies*, they being more valiant and warlike than the *Chinois*, and more patient of labour; one of their Kings conceived no less than that he could conquer *China*, and to that purpose levied 2 or 300000 men, which went against it, and brought back good booty. They have long used the *Art* of *Printing*, they are very civil, and much given to visits and entertainments; they delight in rich and costly furniture in their *Houses*, with the adornment of *Pictures*, *Cabinets*, *Arms*, &c. They are very punctual in performing their promises.

Their Religion and belief.

In matters of *Religion* they are for the most part *Gentiles*, adoring anciently the *Sun*, *Moon* and *Stars*, giving adoration to *Wild Beasts*; but they chiefly worship the *Devil*, and that partly for fear of hurting them: To which purpose, they have in all their *Pagodas*, which are numerous, several ill-shapen Figures which they pray to. And to these *Pagodas*, there belongeth a great many *Priests*, to whom they shew a great respect, and allow a good subsistence who by their habit are known from other persons, and live a very strict life, abstaining from *Flesh*, even to the use of *Women*.

Amongst them they have several *Sects*, which possibly are so many different ways in performing their *Devotions*, in which they are not over strict, nor over devout. Some of them believe the immortality of the Soul, that the Body is reduced to its first principles, and becomes dust and ashes; and that the Soul is either raised to joy, or condemned to eternal sorrow, believing the *Resurrection*; and that at its return into the World, it shall find good or evil, according to its actions: Whereas others make no account of the dissolution of the World nor put any difference between the Souls of Men and Beasts.

They are very jealous of their *Wives* and *Concubines*, not admitting them the liberty of walking abroad, or society with men at home; they are very modest, and not given to meddle with any kind of business that appertains to their *Husbands*. *Adultery* they severely punish, but *Fornication* is permitted amongst them: They are very indulgent to their Children, and give them good education: They are very tender of their honor, being shie of doing any thing which may eclipse it; and as they will give no injuries to others, so they will take none.

Their

Their *Emperor* dwells in great state and pomp, having attendance of *Nobles* and others: He is highly esteemed and revered of his Subjects, even to adoration. In his Government he is in a manner tyrannical, having in his power, the Lives and Estates of his Subjects, though he doth not often shew it; his Revenue is exceeding great, and his power, as hath been spoken of before, very strong.

All his *Nobles* (which are very many) live exceeding stately, and have great Revenues: And when any of them happen to die, they have a custom, that about 20 or 30 of their *Slaves* do voluntarily kill themselves to wait upon the Souls of their deceased Lords, which they hold to be a great honor to them, and a discharge of their fidelity and love they bear to them.

But there are many defaults observed in their government, and in their manner of living: The great number of their Kings and their Princes, which still endeavour to make themselves great; The Revolts and Rebellions, to which those people are subject on the least occasion; The principal form of the Government, which is almost wholly tyrannical. The little care they have of Tillage, and of keeping fowl at home, or Flocks in the Field, makes them often want needfull Food. And it is observed, That they have many manners and customs different, and often contrary to ours, or those of their Neighbors: As when they go out of the house, they leave off their Cloak, which they put not on again, till they come in; whereas we leave it off in the house, and put it on abroad. When they meet a friend, they salute him by putting off their Shoo, and shaking their foot; we salute by uncovering the head. In walking they give the left hand, esteeming it most honourable, whilst we bestow the right so to be. Receiving a friend at home, they remain seated on the ground; we stand till he who comes to see us is seated. The *Earth* covered with *Mats*, serves for *Bed*, *Table* and *Seat*, (for they uphold themselves on their knees, on that *Mat*, when they eat;) our *Bed*, *Table* and *Seat*, are raised from the ground, for our repose or eating. They esteem *Black Hair* and *Black Teeth*; we *Fair Hair* and *White Teeth*. They mount on Horse-back from right to left; we from left to right. They set the name of their Family before their proper name; we our proper name before that of our Family. They will not that those Women they take in Marriage should bring any riches; here we seek after those who have most. So soon as their Women are married, they have no longer liberty to go abroad; here more than before. *Black* is their sign of joy, and *White* of mourning; *Black* our mourning, and *White* our joy. Their richest *Tapestries* are *Mats*; thin, close, and of divers colours; ours of *Wool*, *Silk*, and oftentimes of *Gold* and *Silver*. Their *Stone Buildings* have neither *Mortar* nor *Plaster*; here they build not without both. They despise all *Precious Stones*, and esteem more their *Vessels* of *Earth*, which serve to keep their *Drink*; which we make little esteem of, but much value *Precious Stones*. They drink nothing but what is hot; those most delicate with us is cool. Their *Physick* is sweet and odoriferous; ours bitter and unpleasant. They never let their sick Blood; which with us is very common upon the least occasion. These with several other customs, contrary to ours, do they observe amongst them, which are too long to set down. Nor want they fine Reasons to sustain their Customs better than ours; they say we must conserve our Blood, as one of the principal sustainers of our Life; that we must not give a sick person that which is displeasing, troublesome, and sometimes affrights him to see, much more to drink or eat; that hot water augments the natural heat; opens the conduits, and quenches thirst; that cold closes the Pores, begets the Cough, weakens the Stomach, and quenches natural heat; that their *Vessels*, of which they make themselves, are necessary for many things in a Family, which *Treasured Stones* are not; that their buildings may be easily taken down, carried other where, and erected in another manner, when they will; which ours cannot.

The Japanese differ in many Customs from other Nations.

Amongst their Manners, there are some very good; they hate *Games* of *Risards*; they are very patient in bad fortune; they maintain themselves honestly in their Poverty; suffer not themselves to be transported with *Passion*; speak not ill of the absent; know not what it is to swear, lye, or steal; suffer easily

easily all incommodities of heat, cold, famine, or thirst; yet all this, rather to get the honor of being esteemed constant and virtuous, than being so truly; for they are subject to *Vices*, as well as their Neighbors. But let us leave their Manners, and speak a word of their Government, which of late hath encountered a diversity, and deserves to be known.

The general Estate of all these Isles, was not long since divided into 66 Kingdoms; of which the Isle of Japan alone had 47, which with some little Neighbouring Isles was made up 53; that of *Ximo* or *Saycock* had 9 according to its name, and *Chicock* the other four.

The Estate of these Isles.

At present the order is much changed; the whole Estates are fallen into the hands of one alone, as it hath been formerly; and is divided into 7 Provinces, or principal parts; and those 7 parts subdivided into many others; which ought to pass under the name of Lordships; some of which yet retain the name of Kingdoms, others of Duchies, Principalities, &c.

Those which command in the lesser parts, are called generally *Tones*. *Caron* ranges them in six different degrees, and calls them *Kings, Dukes, Princes, Knight-Barons, Barons and Lords*, which according to our degrees of honour are distinguished by *Kings, Princes, Dukes, Marquisses, Earls and Barons*. *Caron* makes 21 *Kings*; some of which possess 1 or 2, and some 3, and in all 30 and odd of the 66 ancient Kingdoms. After the *Kings*, he puts 4 *Dukes*, 6 *Princes*, 17 *Knight-Barons*, 50 *Barons*, and 41 *Lords*, giving each a Revenue of at least 100000 *Livers per annum*, and so augmenting to the greatest to whom he gives 10 Millions and more; and makes account that the *Cake* or *Cesar* of Japan spends at least 100 Millions of Crowns yearly, as well in the expence of his house, as in his *Militia*, and what he disburses to the *Tones*.

The parts of Japan.

The names of the 7 principal parts, into which the Estate of Japan is divided, are, *Saycock, Xico, Jamoist, Jesso, Jesege, Quanto* and *Ochio*. *Saycock* with the Isles which belong to it, is the nearest to *China*; *Chicock* is on the East of *Saycock*; the other five parts are in the great Island, and extend themselves advancing from East to West. *Jamoist* being the most Western part of all, and answering to the 12 Kingdoms, which the King of *Nangato* or *Amanguci* hath formerly possessed. *Jessenca* and *Jesege* together make the middle of the great Island, and apparently that which passed under the name of *Tenza*, and contained 20 others. *Quanto* and *Ochio* advance themselves from the East, unto the strait of *Sangaar*, which divides Japan from the Land of *Jesso*, of which more anon; *Quanto* comprehended 8 Kingdoms, and *Ochio* the rest, and in these parts there are abundance of Cities and Towns, which I have observed in my *Geographical Tables*.

But because the diversity of names of *Dayri* or *Emperor*, of *Cube* or *Cesar*, of *Tones* or *Kings, Princes, Dukes, &c.* may breed some confusion; to give a more particular knowledge, we will say succinctly, that before the year 1500 there was in all Japan only one Sovereign, which they called *Voq* or *Dayri*, that is *Emperour*.

The Isle or Land of JESSO.

The Isle of Jesso.

After the Isles of Japan, let us speak a word of the Isle or Land of *Jesso*, *Yeddo* or *Jessu*, for divers Authors write its name differently, some calling it the Isle, some the Land above said, and to the East of Japan, in the manner that the *English, Portugals* and *Hollanders* describe it, this Land must extend from *Asia* to *America*: They say that from *Jesso*, which is the most Western point of it, opposite to *Goray*, and near *Tartary*, advancing towards the East, it is 60 days journey to the Province of *Matsumay*; and that from *Matsumay* unto the most Easterly point, and nearest *America*, it is likewise 90 days journey; so that it is 150 days journey from one end to the other, which after only 8 Leagues a day will be 1200 four Leagues. Its breadth is not spoke of.

The

The Strait of *JESSO*, which separates this Isle from *Tartary*, hath great currents, caused by the discharging of several Rivers which come from the Northern parts, and from *Tartary* and *Jesso*. The other strait which separates it from *America*, may in all likelihood be that *Anian*, and those two Straights, limit the two extremities of *Jesso*, towards the midst, must be the Province of *Matsumay* and apparently beyond the Strait, which separates the Isle of Japan, from the Land of *Jesso*; and this strait may be called the strait of *Sangaar*, which is the utmost East-Land of Japan.

The strait of Jesso.

The traverse, or tract of this strait is not above 10 or 12 Leagues; others say not above 50 many miles; others there are affirm it no strait, but an *Isthmus* which fixes Japan to Jesso; and that both the one and the other together are but one Isle; so difficult it is to find the truth of a thing so far distant.

This Isle or Land of *JESSO* is so great and vast, that the *Inhabitants* cannot but have different manners; those which are nearest Japan, resembling the *Japanois*; those which are near *Tartary*, the *Tartars*; and those near *America*, their neighbouring *Americans*; and in all likelihood they are more barbarous than all their neighbours.

Its Inhabitants.

They are all *Idolaters*, covering themselves with the skins of *Beasts*, which they take in *Hunting*; having their bodies all hairy, and wearing their beard and Mustachoes very long: they are Warlike, Cruel, and Formidable to the *Japanois*; In War they have no other remedy for their wounds, but washing them in salt water.

The Land is little inhabited; it would be rich if it were well tilled; it hath many Mines of *Silver*, and quantity of excellent *Skins* and *Furs*, which make it appear that the *Earth* stretches to the Northward. They have some Trade with *Aquita*, which is on the East of Japan; but those of *Aquita* go seldom into *Jesso*, because they cannot with security reside with, or trust those *Barbarians*.

Its fertility.

The PHILIPPINE Islands, or of LUSON and the MANILLES.

THE PHILIPPINE Islands are so called by the *Castilians*, because they conquered them under Philip the second, King of *Castile*. The People of the East call them the Isles of *Luson*, because of the greatest and most famous of these Isles, which they call *Luson*, a principal City of this Isle, being likewise so called. The *Portugals* call them *Manilles*, from the City *Manilla*, at present the chief City of the Isle of *Luson*. They are in the *Oriental Ocean*, to the Southward of *China*, to the Eastward of *India*, North of the *Moluccoes*, and Westward of the Islands of *Theeves*: But they are 400 or 500 Leagues distant from these, not above 100 from *China*, and much nearer the *Moluccoes*, and the Isles of the *Sound*.

Philippine Isles.

Their names.

Their situation is between the *Equator*, and the *Tropick of Cancer*; to wit, from the 5 unto the 20 degree of *Septentrional Latitude*; and from the 155, unto the 170 *Meridian* or *Degree of Longitude*; and so contain 15 or 16 degrees of *Longitude* and *Latitude*, extending themselves in length and breadth 3 or 400 Leagues.

Situation.

LUSON, MINDANAO and *PARAGOTA*, are the greatest; *Luson* towards the North, *Mindanao* towards the South, and *Paragota* towards the West; so that they form almost an *Equilateral Triangle*. *Tandaya* otherwise *Philippina*, *Mindora*, *Panay*, *Masbate*, *Rebujan*, *St. John*, *Cebu* or the *Pintados*, *Negoas*, *Matan*, *Bobol*, and few others are of a lesser circuit. *Tandaya* is South-East from the most Southerly point of *Luson*; and the strait between is called of *Manilla*, not because of the City *Manilla*, more than 100 Leagues distant; but because of the Isles of *Luson*, which are called likewise of *Minilla*. *Mindora* on the South of the Isle of the Gulph, and City of *Manilla*: The rest are between *Luson* and *Mindanao*.

The chief Isles and places described.

We

We might likewise make account of *Messane*, *Calegan* and *Butuan*, near *Cebu*; of *Abuyo* and *Capuli*; of *Banton*, *Rebisan*, *Vireges*, *Marinduque* and *Luban*, between *Masbate* and *Mindora*; of *Iloques*, *Mauris*, *Coyo*, *Bankingle* and *Kapul*, between *Mindora* and *Paragoya*, and between *Paragoya* and *Mindanao*; of the *Little Philippine* on the West; of the *Babuyones* on the North; of *Catandamis*, *Paracalla*, *Linton*, and others on the East of *Luson*; of *Palmes* and *St. John* on the East of *Mindanao*. But we cannot name them all, there being so great a number, that some esteem them 1000 or 1200 of considerable note, and in all 10 or 12000.

Magellan was the first of the *Europeans*, who discovered these Islands in 1520. In 1564 *Don Lewis de Valasco*, Vice-Roy of Mexico, sent *Michael Lopez de Legaspe* to establish some *Spanish Colonies*; and facilitate by that means their Traffick from Mexico with *China* and *Japan*, who seized upon *Luson*, *Cebu*, &c. The *Spaniards* possess at present above 50 of them, among which, *Luson*, *Tenday* and *Cebu*, are the most famous.

Luson sometimes called *New-Castle*, begins before the 13, and ends after the 19 degree of *Latitude* on this side the *Equator*, which are not above 6 degrees or 150 Leagues, but it stretches one of its points towards the East: So that from *Cape Bojador* towards *China*, unto that of *Caceres* towards *Tenday*, is more than 200 Leagues, passing cross the Isle. Its breadth is very unequal, and sometimes only 20, 25, and sometimes likewise 50, 60, and 75 Leagues.

Manille is its chief City, seated in the most Southernly part of the Island, well built, after the modern way; and its Houses are of *Free-Stone*, strong, and so great, that the *Spaniards* have been forced to divide some part of it from the rest, to serve them for a *Citadel*, in case of necessity; by which means, they are not at so great a charge in keeping of so great a number of Soldiers, as would otherwise be requisite for the security of the place. They have a good Port, the entrance into which is yet somewhat difficult, by reason of the Isles and Rocks of *Mirabelles*, at the opening of the Gulph or Bay of *Cavita* or *Cavite*, at the bottom of which, is *Manilla*. The Governor or Vice-Roy of these Isles, as also an *Archbishop*, who hath a *Spiritual Jurisdiction* over all the *Philippine* Islands, which he exercises by three *Suffragan Bishops*, and some *Priests* have here their Residence. This City is very populous, here commonly residing about 15000 *Chinois*, besides *Japoneses*, and a great number of *Spaniards* which drive a Trade, in several good *Commodities* which the *Earth* and their ingenuity produces, which are brought hither, as being the chief City, of which I shall speak anon.

The other Cities of the same Isle are *Cagajon* or *Nueva Segovia*, in the most Northern part; then *Caseres*, in the most Southern part of the Isle. The City of *Luson* is by all Authors described on the Coast, which regards *China*: And this name hath been most famous. Now it is difficult to know, whether *Luson* or *Manilla* are two Cities; *Linscot* thinks them one and the same.

Mindanao is composed of three different Isles, which are almost contiguous, the greatest, which is in the middle of the other two, retains the name of *Mindanao*, having about 100 Leagues of length, and little less of breadth. *Canola* towards the West, 75 Leagues long, and 25 or 30 broad. *Las Buenas Sentates*, or the *Good Ensigns*; or likewise *St. John* on the North East, hath only 25 or 30 Leagues of length and breadth: And these three together, are between the fifth and the ninth *Parallel* or degree of *Longitude*, and between the 162 and 169 *Meridian* or degree of *Longitude*, and contain little less than 200 Leagues from the Point of *Galere* on the West, to *Cape Bicajo* on the East.

They belong to divers *Mahometan* or *Pagan Kings*, who are all in good intelligence with the King of *Ternate* of the *Moluccoes*, and ill-affected to the *Portugals*. Their principal Cities are *Mindanao*, which others call *Tabouc*, *Siragos* or *Suriaco*; *Lomiaton*, or *Lomiatan*, *Dapito* and *Canola*. Of the situation of other Cities, of which some Authors make mention, we have no assurance.

P A R A

The Isle of
Luson.The Isle of
Mindanao.

PARAGOTA or *CALIMIANES* of *Boterus*, is the same thing as *Calamian* of *Linscot*; and as *Puloam* or *Puloaym* of *Maginus*, and others: It begins almost at the 8, and ends not till the 11 Degree of *Latitude*, stretching it self from South-East to North-East, in length more than 100 Leagues, not having above 10, 15, or 25 of breadth. *Boterus* and *Pigafette* say, that it bears *Figs* half as long and as thick as ones *Arm*; and others, only of a *Palm* long, but better then that of *Dates*. Its King is Vassal to him of *Borneo*.

TANDAYA is about the twelfth Degree of *Latitude*, and the 167 of *Longitude*; Its utmost length is about 50 Leagues, and its breadth about 40. It hath born alone the name of *Philippine*, for being the first discoverer of these Islands, and that name hath been communicated to the rest. It is esteemed the best and most pleasant of all; Fruitful, rich, easie to be approached, and its *Inhabitants* courteous. Its chief place is *Achan*.

MINDORA is not much less then *Tandaya*, but not so famous; yet the Streight between the Isle of *Manilla* and *Mindora*, is called *Mindora*; from whence it may be judged, there is likewise a City of *Mindora* on that Streight and that this place hath formerly been famous. There are here Mines of *Gold*. *CEBU* is in the midst of the *Philippines*. The *Spaniards* have built on the East Coast *Ville-Jesus*, under the 10 Degree of *Latitude*, and 165 of *Longitude*. The Port is good, and here it was that *Magellan* contracted Alliance with the King of this Isle, received him into the Protection of the King of *Casile*, and in his favour passed into the Isle of *Matan*, and made war upon its King, where he was killed.

All these Isles in general, are very fruitful, and yield a great quantity of *Grains*, of *Rice*, *Fruits*, *Wine*, *Honey*, &c. which are given almost for nothing. They have *Wine* of *Dates*, which yields not to those of *Grapes*, and which are as strong as *Suck*: They feed much *Cattle*, and *Fowl*, as *Oxen* and *Sheep*, which they carry into *New-spain*; *Hogs*, whose *Flesh* is excellent, *Goats*, *Pulain*, &c. They have many *Wild Beasts*, as *Stags*, and several sorts of *Venison*, *Wild Boars*, *Tigers*, *Foxes*, *Bears*, *Lions*, *Apes*, *Civet Cats*, &c. which inhabit in their *Forests* and *Mountains*; and in their *Rivers* they have *Crocodiles* and an infinite number of several sorts of *Fish*, which are likewise found in their *Seas*: Amongst others *Tortoises*, whose shells are much esteemed for the beauty, and variety of their colours, there being none found like these, and those of the *Maldives*.

They produce likewise *Gold*, *Iron*, *Steel*, *Saffron*, *Wax*, *Cinnamon*, *Long Pepper*, *Ginger*, *Sugar*, with several other *Metals*, *Spices*, *Drugs*, and *Precious Stones*. They fish *Pearls* on their Coasts, and particularly near to *Negros* and *Abuyo*.

But besides the cheapness and abundance of *Victuals* which these Isles afford, and the Traffick which they have so commodiously with *China*, and with *Mexico* or *New Spain*, hath made the *Spaniards* resolve to keep them: And therefore they built some *Fortresses* in 1589 and transported some Families from *New Spain*, with *Horses*, *Sheep*, and other *Beasts* to breed a Race.

The *Chinois* have a great Trade to these Islands, bringing hither all their *Commodities*, as *Silk*, *Cotton* of all colours, *Porcelain*, *Brimstone*, *Cannon Powder*, *Iron*, *Quick-silver*, *Steel*, *Copper*, and other *Metals*; also *Chests*, *Cabinets*, *Pictures*, *Laces*, *Cosifs*, *Vales*, and other curiosities for *Women*. Of all these *Commodities*, there remains a part in the *Philippines*, and the *Castilians* take away the other, and with the *Gold*, *Wax* and *Spices*, which they get in these Isles, carry them to *Mexico*: From whence they bring what is proper, both for the *Philippines*, for *China*, and the *East-Indies*. And this trade which is driven by the South, or *Pacifick Ocean*, is a great, and frequent, as that which is between *Spain* and *Mexico* by the *Ocean*, or *North Sea*.

The Isle of
Paragoya.The Isle of
Tandaya.The Isle of
Mindora.The Isle of
Cebu.

Their Fertility

Their Commo-
dities.

Its Trade.

S s

The

The Isles of Ternate, Tidore, &c.

The Isle of Ternate, its chief places, fertility and commodities.

The Isle of Tidore, its chief places, &c.

The Isle of Machian described.

The Isle of Gilolo described.

In People, and chief places.

TERNATE is the most North; and from it Southward are, **TIDORE**, **TIMOR**, **MACHIAN**, and **BACHIAN**, for little account is made of the rest. **Bachian** is 15 or 16 Leagues circuit, **Ternate**, **Tidore**, and **Machian**, 10 or 12; **Timor**, 5 or 6. the rest less.

TERNATE is esteemed the principal Isle, being about 8 Leagues in circuit, and its Kings the most powerful, both of the True *Moluccoes* and of all that I have passed under the general name of *Moluccoes*; yet he suffers in *Ternate*, *Nofra Seniors della Rosario*, and *Gammalamme* in the hands of the *Spaniards*, *Ta-comma*, *Takucco*, and *Malayo* in the hands of the *Hollanders*, which are in good intelligence with him, as Enemies to the *Spaniards*. The chief place is called *Gamma-Lamma*, is seated on the Sea-side, more long than broad, and of an indifferent bigness; its Houses, Mosques, as also its Palace-Royal, are built of Canes or Timber; its Road and Haven is good, and frequented by Ships. The Country is not bad, yet it yields but little provision besides Poultry and Goats; it yields also excellent Almonds, and bigger than ordinary, and that in great plenty; they have also abundance of Cloves, and other Spices, some Drugs, with such other Commodities as are found in the rest of the Islands.

TIDORE, (those of the Country say *Tadura*, which signifies Beauty) is a little greater than *Ternate*, and as fruitful. Here the People are very industrious in pruning and watering the Clove-trees, by which means they are exceeding fair and strong. Here grows white Sandal-wood, which is held the best in all the Indies. Here are also found the Birds of Paradise. It hath its particular King. The *Spaniards* hold *Tayoula*, *Castello Viejo*, and *Marigeto*, which the *Hollanders* have sometimes taken. *Timor* or *Motir* was once so ill treated by the *Spaniards*, that its Inhabitants abandoned it and retired to *Gilolo*. The *Hollanders* built the Fort of *Nassau*, and have invited near 2000 of its Inhabitants to return. *Machian* as well as *Timor*, belongs to the King of *Ternate*; the *Hollanders* hold *Taffaso*, *Tallibula*, *Nuhaca* or *Nassagua*, and *Mauritio*; it is peopled with about 9 or 10000 persons.

BACHIAN, or **BAQUIAN**, is the greatest of all the *Moluccoes*, but ill peopled, and having but few Cloves; but in recompence it hath plenty of Fruit, and its Sea stored with Fishes. It is divided by several little Channels scarce navigable, which yet divide it into many parts, of which *Marigoram* is in the midst of the others, where the King of this Isle resides. The *Hollanders* hold on the Coasts the Forts of *Gammedure* and *Labua*, both once called *Barnevelt*. This Isle is of an indifferent large extent, the King is absolute, the Soil good, and would become very fertile, if the Inhabitants would leave off their Idleness, and give it Tillage.

MACHIAN is indifferent large and fertile, and well inhabited; its chief places are, 1. *Taffaso*, 2. *Tabibula*, 3. *Mauricio*, and 4. *Nuhaca*.

TIMOR, **Motir** or **MOTIL**, is of a less compass, and Triangular. Its chief place is *Nassau*.

GILOLO or **BATOCHTNE** extends it self to the second Degree on this side, and only to the first beyond the Equator. It hath then 3 degrees of Latitude. Its Longitude begins a little after the 168th Meridian, and reaches to the 172, which are near 4 Degrees, which amount to little less than 100 Leagues of length and breadth; but it is composed but of 4 *Pinhills*, of which one advances towards the North, the other three towards the East; and of these three, the middle one reaches so near the Land of *Papoua*, that there is but a Strait between them.

It is subject in part to the King of *Ternate*, in part to the Kings of *Gilolo* and *Loloda*. It hath Savage People on the North part, where is the Coast of *Moro*, and in some Mountains in the middle of the Country, and the City of *Mannaye* is in form of a Republick. The City of *Gilolo* is not above six Leagues from *Ternate* towards the North. Those of *Gilolo*, *Sabugo*, and *Adhilama*, are near together Eastward of *Tidore*, and on the West Coast of *Gilolo*. On the other side, and towards the East, are the Fortresses of *Tolo*, *Isau*, and *Jassougo*; these six places are in the *Spaniards* hands. The *Hollanders* hold

Sabou

Sabou and *Coma*; *Sabou* a little above *Gilolo*, *Tacoma* or *Cuma* on one of the three Eastern points.

The Air of *Gilolo* is intemperate hot, which makes it unhealthful; the Soil not very fertile, yet hath it great plenty of Rice, wild Hens, and other Fowls. On its Shoars it hath Shell-fish, whose Meat in taste is much like Mutton, and about the Isle plenty of Trees, which they call by the name of *Sagou*; from which they have a Fruit which they make their Bread of; of the Sap or Juice they make a pleasing Drink, which they use instead of Wine; and of a Hair which grows on its Bark they make their Cloaths. It hath but few Cloves; neither have they many Cattle, except tame and wild Hogs. The People are well proportioned, but rude and savage; some of them Gentiles, the rest Mahometans.

CELEBES is composed of many Islands so near the one to the other, that they are commonly esteemed but one. They are fruitful in all Provisions, especially Rice; they yield Gold, Ivory, Saunders, and Cotton; feed much Cattle, and their Sea affords plenty of Fish and Pearls. The Air is healthful, though all most in the same situation with *Gilolo*, except that they advance to the 6th degree of Latitude towards the South. They are well peopled, and its People are tall and comely. They are Idolaters, and much addicted to Piracy. Here is esteemed to be six principal Kingdoms; of which that of *Macassar*, which gives sometimes a name to all these Isles, is the most powerful; that of *Cion* the second; then those of *Sanguin*, *Cauripana*, *Getigan*, and *Supari*; the greatest Cities are *Macassar* and *Bantachia*, 30 or 40 Leagues one from the other; as also *Celebes*, seated on the Sea.

The Land of **PAPOUS**, that is of Blacks is little known, yet is no other than *New Guiney*, and other than the Isle of *Ceyram*, though some would confound it with them. This last is to the Westward of it, and the other to the Eastward; both the one and the other more towards the South. There are some Whites among its Inhabitants, but few; all lean, deformed, and Traytors. They have Gold, Ambergrease, and Birds of Paradise, with which they pay Tribute to their Kings, and to the King of *Ternate*.

CETRAM hath the same qualities, and its Inhabitants like to *Papous*; and well peopled. *Flores*, *Solar*, *Matua*, *Susu*, *Timor*, *Ombo*, *Terraltu*, &c. are divers Isles under the 8th, 9th, and 10th degrees of South Latitude, and which advance from the 160th unto the 175th degree of Longitude. *Timor* (another than that *Timor* of the *Moluccoes*) is the most esteemed. It produces store of Grains and Fruits, feeds many Cattle and Fowl; amongst its Drugs and Spices, it hath Ginger, Cinnamon, and whole Forests of white and yellow Saunders. Its Inhabitants are Idolaters, half Savages, and had the use of Fire but lately. *Matua* on the West of *Timor*, hath quantity of Pepper. *Solar* is other than *Solve*, or *Solayo*. This last is 10 Leagues from *Celebes*, and between the 6th and 7th degree of Latitude; that 15 or 16 Leagues from *Timor*, and between the 8th and 9th degree of Latitude. The City *Adonare* is the residence of the King of *Solar*, and there is a great trade for Saunders between this Isle and *Cabanaxza* in *Timor*. *Solar* hath likewise Gold and Pearl.

Almost in the midst of these Isles, which we call in general the *Moluccoes*, are those of *Amboyne* and *Banda*, which are but small, yet are in great esteem. Those of *Amboyne* are, *Amboyne*, *Veranula*, *Hittou*, *Noesan*, and some others.

The Isle of **AMBOTNA** hath its chief City of the same name, which is of some considerable note, besides several other small Towns and Villages. This Island was first discovered by the Portuguese, who had here the command of a Castle and other Forts, which the *Hollanders* took in 1605, and have possessed likewise the Fortress of *Coubella*, *Lovio*, and the Redout of *Hittou*, in the Isle of *Hottou*. The *Spaniards* dispossessed them a little after 1620, and the *Hollanders* have regained them since, where they drive a great and profitable Trade. The Land at first was barren, but by their industry it is now become very fertile, producing Rice, Sugar, quantity of Fruits, especially Lemmons.

The Air.

The Isle of Celebes described.

The Land of Papous.

The Isles of Ceyram, Flores, &c.

The Isle of Amboyne, its fertility and commodities.

mons and Oranges, Cocq-Nuts, Bonanas; several Spices, but principally Cloves; of which alone they receive great profit. Here it was that the *Hollanders* did once, with a never to be forgotten cruelty and barbarousness, murder the *English* that resided and traded thither, on purpose to gain the whole Trade to themselves.

Its Inhabitants

The Inhabitants were heretofore *Brutish Cannibals*, inasmuch as they would eat one another, though their nearest Relations, when age or sickness seized them; and all *Pagans*: but since by reason of the Commerce they had with the *Persians* and *Arabians*, *Mahometism* is somewhat received amongst them, as also *Christianity*, by reason of the *Portugals* and *Dutch*; which in time may come to some perfection, though at present it is but very small. But notwithstanding they make use of their *Paganish* Superstitions, adoring the *Devil*, who appears to them when they invoke him; in which they are very superstitious and ceremonious. They are much given to *Sorcery* and *Conjurations*, very prophane, barbarous, not given to Arts or Literature. They are naturally unfaithful, thievish, covetous, stupid, and very timorous. In their *Marriages* they make no great Ceremonies, taking one anothers words, which as slightly they evade, leaving one another upon the least occasion of offence, and are free for another.

The Isles of Banda, Nera, and Gumanapi described.

The Isles of *BANDA* are three principal ones. *Banda*, which communicates its name to the rest, *Nera* and *Gumanapi*, and 3 or 4 lesser ones, *Wayer*, *Poloway*, and *Pulorin*; some add *Poelseton*, the most Western of all. *Banda* hath the Cities or Towns of *London*, *Ortatan*, and *Combor*; *Nera* hath that of *Nera* and *Labetach*; *Gumanapi* hath only one of its name, underneath a Mountain which vomits *Fire*; *Nera* is the chiefest of all. The *Hollanders* hold in the Isle of *Nera* the Forts of *Nassau* and *Belgica*, and in the Isle of *Poloway* the Fort of *Revenge*.

These Isles are unhealthful; the *Nutmegs* and *Mace*, which these Isles produce, make them frequented by Strangers. These Fruits they gather thrice a year, in *April*, *August*, and *December*.

Besides these Isles already spoken of, there are these following which are ranged and numbered with those of the *Moluccoes*, and are found as they lie, either on the Coast or Shoar of the Isles *Celebes*, *Gilolo*, or Land of *Papous*, so participate of their nature, temperature, soil, or the like; which I have taken notice of in the *Geographical Table*.

Its People.

The Inhabitants are *Mahometans*, in which they are very zealous and superstitious, not entering into their *Mosques* without washing their Feet; and when they are there, very fervent in their Prayers, which they use often. They are very obstinate, and the Men are much given to idleness, minding their Recreations, and leaving their affairs to their Wives. The People are here observed to live to a great Age. The People of all these Isles, which have passed under the names of *Moluccoes*, are of different humors; those which are on the Coasts most frequented by Strangers, are the most civil; yet others more barbarous. And on the Coast they are either *Mahometans* or *Christians*, the rest *Idolaters*; but the *Spaniards* and *Portugals* on one side, and the *Hollanders* on the other, do much trouble these Islands, making themselves Masters now of one, and then of another; for the most part making War betwixt themselves, or with the Islanders; among which there are divers Kings, some subject to the *Portugals*, and others to the *Hollanders*. Amongst all these Kings the most powerful is he of *Ternate*, to whom belong *Ternate*, *Motbir*, and *Bacchan*; likewise *Cayoa* and *Saizan*, amongst the True *Moluccoes*; and thereabout those of *Mera*, where are built his *Carcoles*, that is, *Vessels of War*; *Sulaura*, *Xulo*, *Bura*; those of *Ambona*, among which *Seyram* seems to be comprized. The part of the Land of *Papous* part of *Gilolo*, and the *Celebes*, whose Kings are tributary to him. *Argentea* saith, That in 70 Islands, which are in his Empire, he can raise 10000 Men, and that he keeps ordinarily a great number of *Garcoles*, with many *Cannons*, and all things necessary; and that the Captains of his Militia are aged Men, which have been bred and educated in Arms.

Their Kings.

The Isles of LARRONS, or THE EVES.

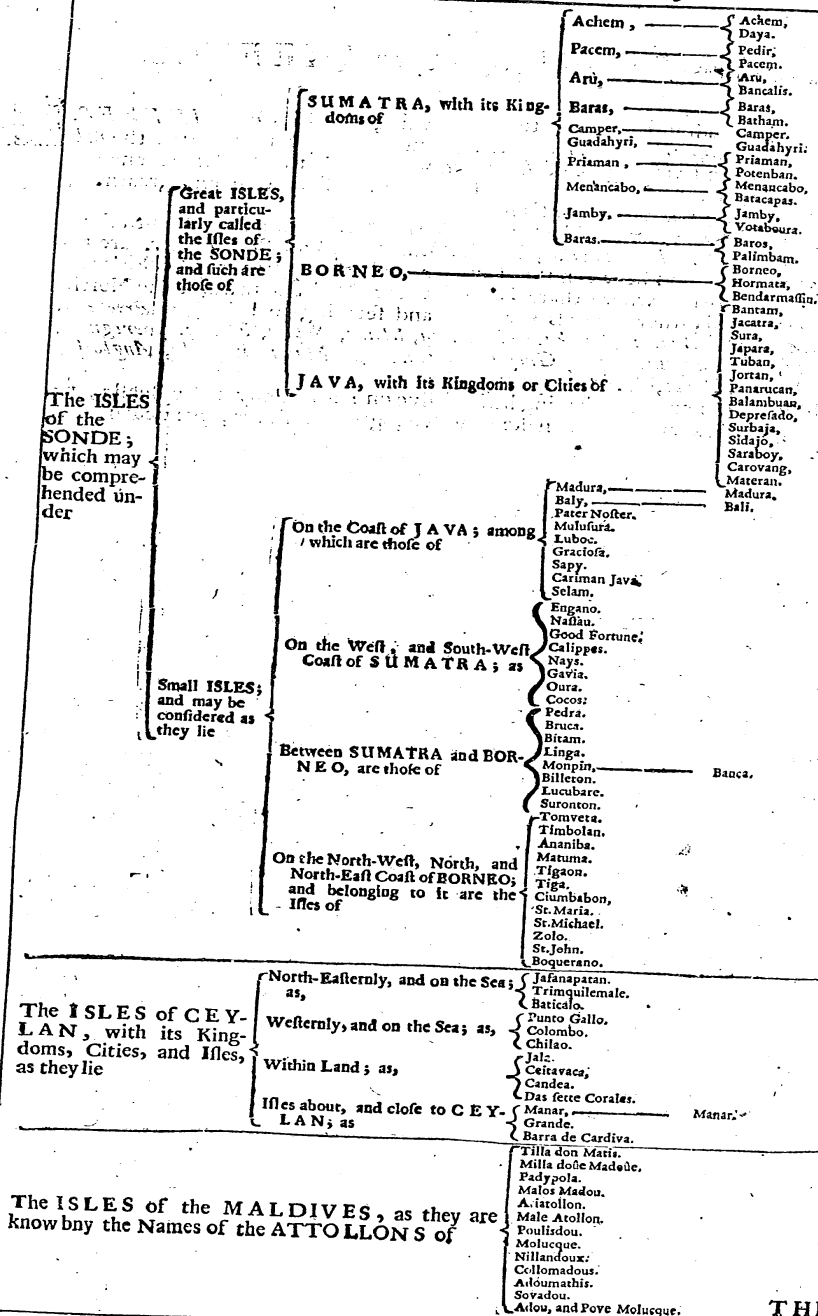
WE have almost nothing to say touching the Isles of *THE EVES*. They are 16 or 20 different Isles, which continue from about the 8th unto the 20th and 21st degree of Latitude on this side the Equator, and are almost all under the 188 Meridian. Their names, situation and greatness, a guess may be given of by the Chart.

The Isle of *Dancers*, of *Martyrs*, of *Birds*, &c. Towards the South those of *Pulo Vilan*, *De los Arcisfos*, *De los Matelotes*, and *Bidima*, &c. are towards the West, and between the *Larrens* and *Philippines*: The *Volcanis* towards the North, where there is *Cochineal*: *Malpelo* towards the North-East, but indeed rather towards the East, and seeming to belong to *America*. Also the Isles of *Bacim*, *Botaba*, *Volia*, *Can*, *Mata*, *Sepan*, *Natan*, *Ghereguan*, *Guagan*, *Artomagan*, *Agan*, *Gregua*, *Chemochoa*, *Maná*, *Englese*, *Angloise*, *Malabrigo Deserte*, &c.

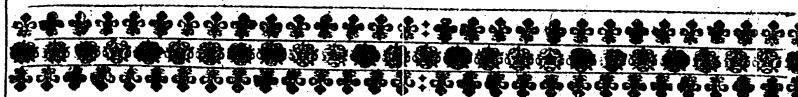
All these Isles are poor, having little to live on; scarce any tame Beasts, no Metals; the Inhabitants are naked, active, great Thieves, particularly of Iron.

The Isles of Larrens described.

The



THE



THE ISLES OF THE SOUND.

THE Isles of the SOUND are those of *Sumatra, Borneo, Java*, the greater and lesser, and others: They are underneath and about the *Equator*, advancing on this side, to the seventh and eighth degree of *Latitude*, towards the North; and beyond it, unto the ninth or tenth degree of South *Latitude*; beginning at 135 Degrees of *Longitude*, Westward, and ending about the 160 Eastwards: So that they are together 16 or 18 Degrees of *Latitude*, which are 400 and odd Leagues; and 24 or 25 Degrees of *Longitude*, which are 600 or thereabouts.

The *Portugals* called them the Isles of the *Sound*, because they are to the South of *Malacca*, as *Pyrardus* saith. I believe rather, because of the *Streight* of the *Sound*, which is between the two chief, and best known of these Islands, to wit, *Sumatra* and *Java* major; or else, because of the Port of *Bantam*, which is called of the *Sound*, being the best Port, and of the greatest concourse that is in all these Islands.

The Island of *SUMATRA* is 10 or 12 Leagues from the *Peninsula* of *Malacca*, and extends from the sixth Degree of *Latitude* on this side, near to the sixth on the other side the *Equator*, which are about 11 or 12 Degrees of *Latitude*; but it lying from North-west to South-east, stretches from its Northerly point towards *Achem*, unto that of *Labanamor* towards the South, and on the *Streight* of the *Sound*, near 400 Leagues, being not above 50, 60, or at most 80 broad.

Some Authors divide it into 4, others into 10, and others into 30 *Kingdoms*. It is to be believed, that it had sometimes more, sometimes less, or that the least were Vassals or Tributaries to the greatest. At present those most famous are *Achem*, which holds likewise *Pedir*, to which it hath been subject, and *Pacem* on the Northern Coasts towards *India*; *Camper* almost underneath *Palimbang*, *Jamby*, *Guadabyri*, *Priaman*, *Baras*, and *Manancabo*, beyond the *Equator*: All which are the Seats of so many of their Kings. But a word or two of *Achem*, which is of the greatest esteem.

The City of *Achem* is seated on the side of a very broad River, and in a large Plain: It hath neither Gates nor Walls to defend it self, but a *Castle*, which is the *Palace Royal*, which is fortified with a good Wall and *Pallisado*, and well armed, and so seated, that it commands the whole City: They enter into this *Castle* or *Palace* by seven several Gates, one after another, which are guarded by Women that are expert at their Weapons, which are also the ordinary Guard of the King's Person; and without the leave of the King, or his Guard, none are suffered to enter the *Pallisado*. The Buildings in this *Castle* are but mean, which are the same with those of the City, which by reason of the often overflowing of the River, are built upon Piles; and covered

The Isles of the Sound, Their situation.

Their Names.

The Isle of Sumatra, in situation.

Its parts.

The City of Achem described.

covered with *Coco Leaves*, but the furniture which is rich and costly. On two sides of the *Castle*, there are pleasant *Forests*, well stored with *Apes*, *Herns*, and all manner of *Birds*, and other delights, in which the *King* recreates himself; as also in *Cock-fighting*, *Hunting* the *Elephant*, or *Bathing Himself* in the *River*. In all which, he seldom is without a *Company* of *Women*, in whom he most delighteth. He observes great state, seldom shewing himself; he is much revered by his *Subjects*, whom he uses no better than *Slaves*: In his *Laws* he is very severe; and in his *Punishment* cruel. His *Government* being absolute and merely arbitrary. His *Revenue*, without doubt, must be great, by reason of the rich *Commodities* that are found here. He is so powerful, that in 1616 he put to Sea 60000 Men of War, in 200 Ships and 60 Gallies, with store of *Cannons* and *Ammunition*, to make War against the *Portugals* in *Malacca*; and he alone drove them from the *Fort* which they had in *Pacem*; and hindred them from taking footing in *Sumatra*.

The *Air*, by reason of the great heats, is very unhealthy, withal, is very fertile, abounding in *Rice*, *Millet*, *Oyl*, *Beefs*, *Goats*, *Sheep*, *Fowls*, *Fish*, store of *Fruits*; also it is rich in *Gold*, though of a lower alloy, in *Silver*, *Copper*, *Iron*, *Tin*, in *Precious Stones*, in *Silks*, in several *Spices*, as long and common *Pepper*, *Ginger*, *Cinnamon*, *Cloves*, *Nutmegs*; also in *Medicinal Drugs*, in *Wax*, *Honey*, *Campfire*, *Cassia*, *Bezar*, *Lignum*, *Musk*, *Civet*, *Amber*, *Aloes*, whole *Woods* of *white Sindale*, abundance of *Cotton*, &c.

The *Hollanders* are in good intelligence with the people, and *Kings* of *Sumatra*; and particularly with him of *Achem*: They have no place or *Fortress* in the *Isle*, but at *Jambay*, a *Kingdom*, *City*, and *River* of the same name; in one degree and fifty minutes beyond the *Equator*. They have built on this *River*, and 25 Leagues from the *Coast*, a *House* to accommodate their *Traffick* with the *Islanders*: Their *Trade* is for the most part *Pepper*, which they send from this *House* to the *Sea* by *Canoes*. The *Inhabitants* are many of them good *Artificers* and expert *Mariners*; they are for the most part *Gentiles*, yet of late *Mahometism* hath crept in amongst them: They are of an *Olive* colour *Complexion*, flat-faced, but indifferent well proportioned, and content themselves with a mean habit.

The *Island* of *BORNEO*, like to *Sumatra*, is part on this side, and part beyond the *Equator*; but it reaches on this side unto the seventeenth degree of *North Latitude*, and beyond only to the fourth of *South Latitude*. Its *Form* is almost round, having only 250 Leagues from *North* to *South*, and little less from *West* to *East*; containing in its *Continent* more than *Sumatra*, or any other *Isle* we have knowledge of in *Asia*; but it is not so well inhabited, nor of so great *Trade* as *Sumatra*, yet more fertile, and besides the same *Commodities* hath quantity of *Myrabolans*. Its *Forests* are full of *Trees*, which bear the most excellent *Campfire* in the *World*, which is uttered in the *Indies*, being too dear to be brought farther: That which comes to us from *China*, is so falsified, and of so little value, in respect of that which comes pure from *Borneo*, that one hundred pounds of the one, is not worth one pound of the other. It hath also plenty of *Provision*. *Borneo*, *Bendarmassin*, *Lave*, and *Hormeta*, are the fairest *Cities*, or at least the best known of the *Isle*; for we yet know nothing of the *Eastern Coast*. *Borneo* is on a *Salt Lake*, or rather at the bottom of a *Gulf* of the *Sea*, as *Venice* is, and is on the *North-West* of the *Island*. Its *Houses* are built of *Wood*, and upon *Piles*, and are accounted to be 20 or 25000. Through every *Street* runneth a *Channel* or *River* of *Water*; the *Palace* of the *King*, and the *Houses* of the principal *Lords* are of *Stone*, and on the firm Land, *Bendarmassin* and *Lave* are towards the *South*, regarding the great *Java*, and both belong to the same *King*: They build many *Juncos* at *Bendarmassin*. The *River* of *Succadan*, and the *Neighbouring Forests* furnish them easily with *Wood*, and all that is necessary for the building of those *Vessels*. *Lave* is near a *River* of the same name; and this *River*, as *Succadan*, yields *Diamonds*. *Hormeta*, is described by the *Hollanders* on the *Coast*, *Westwards* of the *Isle*, and they esteem it to have 2 or 3000 *Houses*.

The

The Fertility,
Commodities,
&c. of these
Isles.

The Isle of Borneo
its situation,
and fertility.

The *Inhabitants* are great, of an *Olive* colour, of a good countenance, their *Women* brown and chaste, a thing very rare in the *Neighbouring Islands*. They trade little to distant places, being more inclined to *Theft* and *Piracy*, then to *Trade*; exercising this only with their *Neighbours*, the others with *Strangers* far off. They are expert in all sorts of *Arms*, of good *Wits*, and capable of *Arts*. Their *Apparel* is much the same with the *Indians*, which is a *Linnen Cloth* about their *privy Parts*, and on their *Heads* *Turbets*. In their *Religion* they are either *Mahometants* or *Gentiles*.

About *Borneo* are a great quantity of little *Isles*, *Bonquerano* 3 Degrees, *St. John* 4. *Jolo* or *Zolo* 5. *Tagyma* 6. and *Combahan* 8 Degrees of *Latitude*: This last is on the *North* of the *Gulph*, and *City* of *Borneo*; near that *Gulph* is *Pulogitgan*, &c. all these *Islands* belong to the *King* or *Kings* of *Borneo*.

The two *Islands* of *JAV A* *Major* and *Minor* are to the *South* of *Borneo*: however there is much dispute about the seat of the little one, the greater lies from the sixth, unto the eighth, ninth, or tenth Degree of *South Latitude*; for we know not its certain breadth: And from the 145 Meridian beyond the 155, this length being 250 Leagues, and its breadth little less. We have scarce knowledge of any but the *North-coast* of this *Island*, none at all of its *Southern*.

Along the *North-Coast* of *Bantam*, where is one of the greatest *Trades* of all the *East-Indies*, and where the *Merchants* of the *East-India Company* of *England* have their residence, and where once there was a like *Company* for the *Hollanders*, which they have transported to *Jacatra* or *Batavia*. *Bantam* is at the foot of a *Hill*, from which descend three *Rivers*; of which one passes through the middle, the others long, and on the two sides of the *City*, communicating by divers *Channels*, convenient for the *Mahometans*, who believe themselves purged from their sins, as often as they wash, but all too shallow for *Ships* to sail in; the *Walls* of the *City* are of *Brick* of no great strength, as also are their *Gates*, which makes them have the greater care in guarding them: The *City* is indifferent great, yet have they but three principal *Streets*, and these all but upon the *Castle*; at every corner of the *Streets* there stands a guard, and at *Sunset* they make fast all passage *Boats*, so that in the night there is no stirring in the *Streets*. The *Houses* are but meanly built, either of *Reeds* or *Straw*, and covered with *Coco-leaves*; but for preservation of *Goods*, they have *Store-houses* made of *Stone*; they have several places or *Markets* for the sale of *Commodities*, as also an *Exchange* where *Merchants* meet.

The *Commodities* of *Bantam* are these of the *Isle*, as all sorts of *Druggs*, *Pepper*, *Sugar*, *Preserved Ginger*, and all sorts of *Sweet-meats*, both wet and dry; *Reed*, *Honey*, &c.

Also in this *City* is found several good *Commodities*, which are the product of other places, which are here had at easie rates, viz. *Spices*, *precious Stones*, *Ammunition*, *Sandal-wood*. *Silk* both raw and wrought into several *Fabricks*, as *Velvets*, *Sattins*, *Damask*, *Cabinets*, *Lacque*, *Porcelain*, *Callicopes*, *Frankincense*, *Campfire*, *Benjamin*, &c.

It is governed by a *Supream* or *Sovereign Prince*, whom they entitle the *Mattaran*, and hath four *Deputies* or *Tetrarchs* his *Subordinates*. It is very well peopled; the *Houses* of persons of quality are better built, then the rest, having square *Courts* at their entrance; and commonly there is a *Mosque* belonging to every one of them, as also a *Cistern* to wash themselves in. The *Palace* is indifferently well built, shewing some kind of state; here the *Christians* (who are great traders to this *City*, bring in most of the *Commodities* except *Pepper*, *Cotton*, *Wool*, and *Rice*) have a place of meeting for their worship.

Fifteen or twenty Leagues from *Bantam* is *Jacatra*, now *Batavia*, once the *Hollanders* have builded this on the ruins of the other, where they had a fair *Magazine*. The *King* of *Jacatra* assisted by some *English*, besieged it about the year 1618, the *Hollanders* defended themselves till March 1619, that their *General Koen* returning from the *Moluccoes* raised the siege.

Its Inhabitants

Several small
Isles.

Isles of Java
Major and Minor,
their situation,
length,
and breadth.

The City of
Bantam described,
with
its great trade.

Its Commodities.

The Cities of
Jacatra,

T t 2

siege; took and ruined *Jacatra*, and rebuilt *Batavia*, with a very good Citadel: This place is at present the Seat or Court of the General and Counsellors of the *East-India Company*, for the *United Provinces*.

Continuing along the Coast, and 100 or 120 Leagues from *Batavia* is *JAPARA*, a City and Kingdom with a good Port, and a fair River: *TUBAN* 20 or 25 Leagues from *Japara*, likewise a City and Kingdom, and Gulph: Fifty Leagues farther is the City, River, and Port of *Jortan*, which is of great concourse, for those that go or return from *Bahita* to the *Molucces*, and from the *Molucces* to *Bantam*; *Passaruan* is 20 Leagues from *Jortan*, and *Panarucan* yet 8 Leagues farther: This makes the most Easterly point of *Java Major*: *Balambuan* is 12 or 15 Leagues from *Panarucan*, inclining towards the South. All these Cities have each their Kings. *Balambuan* regards the Isle of *Baly*, and the streight that is between them, takes its name from *Balambuan* as the most famous. Many *Portugals* remained at *Panarucan* to facilitate the Commerce they had of the *Molucces*, of *Amboyna*, *Banda*, *Timor*, &c. with *Malacca*, or those places they possess on this side, *Panarucan* being in the way between. Near this City a Sulphurous Mountain cast forth such great quantity of Stones and Cinders in 1588, that 10000 persons were stifled.

In the midst of the Isle of *JAVA*, and towards the South Coast is the City of *Maderan* or *Materan*, the residence of the most powerful King of *Java*: This City is 100 Leagues from *Bantam*, 100 or 120 from *Balambuan*, and only 35 or 40 from *Japara*. This King once commanded the whole Isle; he yet commands those Kings which are in the High-land, and on the South Coast: Those on this side have freed themselves from his Rule, rendering him only certain Duties, yet some places he holds on this Coast.

We have no certain knowledge of *JAVA Minor*, if we do not esteem it to be those Isles to the East of *Java Major*, and whose Northern Coast we only know. *Mark Paul* of *Venice*, who made the first Relation, saith that it contained 2000 Leagues Circuit, which would be more then our great *Java*, as we know it at present; he saith it had eight Kingdoms, of which he had seen six; gives to the soil the same qualities with the great one; but that its Inhabitants were more savage, and some Man-eaters: We shall presently speak a word or two of both *Javas*.

On the East of *Java* is *BALT* Isle, which hath not above 40 Leagues Circuit, yet is peopled with 600 thousand Souls, hath its particular King, rich, and magnificent. *Madura* Isle on the North-East of *Jortan* in the *Java Major*, is likewise full of people; Its Cities are very fair; hath its particular King; its people are wicked and perfidious.

The people of all these Isles are *Mahometans* on the Coast, up in the Country great Idolaters; and some Man-eaters. They have many Kings, and have hitherto been able to hinder the *Spaniards*, *Portugals*, and *Hollanders*, from building on their Coasts; yet these last have lately got *Batavia*, which they bravely maintain.

The people are corpulent, of a middle stature, broad-faced, little eyes; they wear long hair, of a Chestnut complexion; they are addicted naturally to theft, stout and courageous, very malicious when angered, very proud, deceitful, and great lyars; their cloathing is as the other *Indians*, that is, only a piece of cloth tied about their privy parts. Yet some exceed, whereas others go quite naked. They yet retain divers barbarous Customs and Ceremonies, as well in matters of Religion as otherwise. Their Weapons are the Bow and Arrows, the Dart, the Lance, and Shield, and Crizes, a strange and cruel weapon.

The Country or Islands are very fertile, affording very many rich Commodities, as hath been spoken of already, which are all very excellent; they have several sorts of both tame and wild Beasts, abundance of Fowls and Fishes, among the rest Oysters, which if *Mandellshoes* may be credited, weigheth 300 pound weight; among their Serpents they have *Crocodiles* very large; and for their Fruits, they may compare with most places, as well for the fairness, pleasant tastes, as for the great variety of them. This

Japara.

Jortan.

Passaruan.

Balambuan.

Maderan described.

The Isle of Java Minor.

The Isles of Baly and Madura.

Its People.

Its Fertility.

This Isle is much troubled at some part of the year with dreadful Thundrings and Lightnings.

Let us now make a short observation on the one and the other *Java*, and the neighbouring Isles and Countries, according as *Mark Paul* of *Venice* hath described them. It seems that his great *Java* must be the Isle of *Borneo*, his Isles *Sondor* and *Condor* must be *Pulo Lohdor*, his Province of *Beach*, the *Peninsula* of *Malacca*, his Isle *Patan*, that of *Sumatra*, and his *Java Minor* our present *Java Major*: And it is to be believed that *Borneo*, *Sumatra*, and *Java* are likewise the three *Sindes* of *Protony*.

The Isles of CEYLAN, and the MALDIVES.

NOT far from the Cape of *Comori* are the Isles of *CEYLAN* on one side, and the *MALDIVES* on the other. *Ceylan*, 60 Leagues towards the East; and the *Maldives* 150 between the East and the South.

CEYLAN is the *Trapobane* of the Ancients, though *Protony* makes it unmeasurably greater then *Ceylan* is now found. Its situation is on this side the *Ganges*, and near *Cape Comori*, of old *Comaria Extrema*; likewise near *Cape de Cael*, of old *Gori* or *Caligicum promont.* and on the streight of *Manar* or *Quilao*, of old *Argaricus Sinus*; near which, or a little farther, is the Land of *Madura*, of old *Madura Regia Pandionis*; and divers other particulars making sufficient proof.

The *Indians* name it *Tenerafin*, that is, the Land of *Delights*; the *Arabs* *Zeilan Dive*, that is the Isle of *Ceylan*. It extends itself from 6 to 10 Degrees of *Latitude*, and so comprehends four whole Degrees, which makes 100 Leagues from South to North: It hath but two Degrees and a half, or little more of *Longitude*, which amounts to sixty and odd Leagues from East to West: The whole Circuit is about 300 Leagues; its form is almost Oval, or rather like a *Pear* for *Pear*, whose tail is North, and its head South.

Some place in this Isle 7 Kingdoms, others 9, and others more; that of *Jafnapatan* is the most Northerly; those of *Tringulemale*, and *Baricath* are the most Easterly; those of *Chilao* and *Colombo* the most Westerly; and that of *Jaba* the most Southward; those of *Candea*, of *Sette Coralles*, and *Ceravaca*, hold the middle. *Candea* is at present the most famous; those of *Colombo* and *Ceravaca* have sometimes been the residence of Kings, which have commanded all the Island.

At present the *Portugals* hold *Colombo*, *Chilao*, *Manar* Isle and Fortress, *Jafnapatan*, and some other places on the Coast, which regard the streight of *Chilao* and *Manar*. *Colombo* and *Chilao* are not above 60 Leagues, or little more, from *Cape Comori*, *Manar* 25 or 30 Leagues from *Cape de Cael*, and *Jafnapatan* 15 or 20 from the *Cape of Negapatan*.

The best Ports of this Isle are those of *Gallo*, *Colombo*, and *Chilao*: That of *Gallo* is one of the best known of all *India*, because all that come, or go, are constrained to make the point of *Gallo*, for fear of falling on the Banks of the *Maldives*: Some years past the *Hollanders* took this important place from the *Portugals*.

The Air is so temperate, and the Land so fruitful, that some esteem it the Earthly Paradise. Its Fruit, Herbs, and Plants have a marvellous pleasant odor; its *Cinnamon* is the best in the World, and particularly towards *Colombo* and *Ceravaca*, there is found much *Cardamom*, *Arice*, *Nutmegs*, *Pepper* and other Spices; and several Druggs, also *Lignum Aquile*, *Lignum Serpentis*, *Gold*, *Silver*, *Brass*, *Iron* and other Metals; though the Mines are not wrought; many precious Stones, among others those which the *Portugals* call *Ombres*; they have no *Diamonds*, but many *Pearls*, which they fish for in the streight between this Island and the Continent. The Soil produces Corn, Oyl, Wine, Cotton, abundance of *Rice*, several roots for Diers. Among

The Isles of Ceylan and the Maldives.

Ceylan, its situation and extent.

Its parts.

The Portugals here inhabit.

Its Air, Fertility, and Commodities.

mong their Beasts their *Elephants* are so excellent, and so docile, that those of other places bear honour to them as to their Superiours. They have great plenty of Fowls, Cattle; and their Rivers yield great store of Fish.

As concerning the Coyns, Weights, and Measures of the Isles of *Ceyland*, and the *Maldives*, I have no certain account thereof, wherefore I omit them.

The Islanders are generally great, black, deformed, having their Ears long, and their Nostrils large, for the rest well disposed and active, great Dancers, insomuch that they may furnish all *India* with Comedians and Juglers; they are rich, and smother themselves in delights, all things agreeing to it, yet are they inclined to War. In those places possessed by the *Portugals* are many Christians, the rest Idolaters or Mahometans.

The MALDIVES.

THE *MALDIVES* take their name from *Male* the chief City of these Islands, and *Dive* which signifies an Island; they are an infinite number of very little Islands, all seated in the *Indian Ocean*, on this side *Cape Comori*, beginning at the eighth Degree of Northern Latitude, and not ending till the third or fourth of the South, the *Equinoctial Line* passing over them, so that they extend in length 300 Leagues, in breadth not above 15, 20 or little more.

They are divided into thirteen *Attollons*, separated the one from the other by certain Channels, and containing each a great number of little Isles: From hence the King of *Maldives* terms himself King of 13 Provinces, and 12000 Isles; though there be many less, and the most of them desert, and which the Sea covers when it is high.

The disposition of these *Attollons* is admirable; then their Banks, their Entrances, their Currents; the *Attollons* are almost round, or Oval; each having 30, 40, or 50 Leagues circuit; and succeeding one another from North, North-west, to South, South-east, there resting between them but certain Currents, large, little or more, but all dangerous.

These *Attollons* are each encompassed with a great bank of stones, there being no human Art could better wall a place, then these banks do their *Attollons*, the Sea breaking its waves against the banks, and within the *Attollons* there being a perfect calm, and but little depth of water. The entrances are certain open places of 40, 50, some of 100, 200 common paces, which the Author of Nature hath given to every *Attollon*; that is four to each, to facilitate their passage from one *Attollon* to another; for the Currents which are between the Channels, being carried six Months to the East, and six Months to the West; it was impossible to pass from one *Attollon* to another, if there were but two openings, one opposite to another. These Currents moreover are so rapid, that when it is calm, and when the wind goes with them, they carry a Vessel sometimes to *Malabar* and *Ceylan*, and sometimes to *Sumatra*, without possibility of stopping of it; and on the other side, even to *Arabia* and *Africa*.

The names and order of these *Attollons* descending from North to South, are *Tilladon Math*, that is the high point, and by the *Spaniards*, *Cabexa de Ibae*, head of the Islands; then *Milla doue*, *Madoue*, *Padyola*, *Malos*, *Caridon*, *Attollon*, *Male Attollon*, where is the Isle of *Male*, *Fauls*, *don*, *Molugue*, *Collomadox*, *Adoumatu*, *Souadou*, *Addou* and *Pote Molugue*, the two last being esteemed but one.

The largest Channels, and there where the Currents are the strongest, are those of *Malos*, *Madoue*, *Caridon*, *Aldou*, and *Souadou*. *Francois Ricard* a great Traveller was shipwreckt on the first, and remained five years in the *Maldives*, where at leisure he learned the tongue, situation, and manners of the Inhabitants, and hath left out a publick description of every particular.

The

The Inhabitants.

The Isles of the Maldives, their situation, and parts or Attollons.

The King of these Isles resides in the Isle of *Male*, which is one of the greatest, though not above a League and a half in Circuit: It is one of the most fruitful, and seated in the middle of the Longitude of three Islands. Strangers frequent it, because of the Court. There are no Cities through all, their disposition being sufficiently commodious; their situation denotes a great heat, yet the days being equal to the nights, and the nights subject to great Dews, they refresh the Earth; so their Summers are without rain, and their Winters without ice; but these pouring down rain with a constant West South-west wind, the Fever among the *Maldives* is very common, and dangerous to Strangers, whom it often kills in few days.

There grows neither *Rice* nor *Wheat*; yet are Provisions better cheap than in the rest of the *Indies*. They have *Rice* from the Continent and gather at home *Millet* in abundance, and the Grain of *Bunbi*, like to *Millet*, but black. They have much *Fruit*, *Citrons*, *Pomegranates*, *Oranges*, *Bananes*; and above all, so great abundance of that Nut of *India*, called *Cocos*, that no Country in the World hath so much. All the *Levant* is furnished hence, lading every year several Ships. They have many *Animals*, little *Beef* or *Mutton*; no *Dogs*, for they abhor them: Quantity of *Fish*.

They have many little Shells, which pass in many places for Money, and they lade yearly 30 or 40 Ships with these Shells for *Bengala* only, besides what they lade for other parts. Their *Tortoise Shells* are much esteemed at *Cambaya*, because they are smooth, black, and well figured; with which they make *Combs*, *Cases of Looking-glasses*, &c. Their *Tavarcarre* or *Cocos*, particularly of the *Maldives*, is very Medicinal, and of greater value then their *Amber-greece*, and their black *Coral*. The King alone is to have this *Tavarcarre* and *Amber-greece*, not permitting his Subjects to trade in it.

There is brought to the *Maldives*, in exchange of their Commodities, *Rice*, *Cloth*, *Silk*, *Cotton*, *Oyl*, *Areca*, *Iron*, *Steel*, *Spices*, *Porcelain*, *Gold* and *Silver*, which come not thence again. Its Inhabitants make use of all sorts of *Arms*, yet their King is neither rich, nor powerful, except in his Isles, and in regard of his own Subjects.

Amongst the rarities of this Isle, their *Candou* and their *Coco's* are observable. They make Planks of the Wood of *Candou*, with which they draw out of the Sea all sorts of weights, though of 10000 pound. Their Tree is as great as our *Walnut-Tree*, leaved like the *Aspin*, and as white, but very soft: It bears no Fruit; they make Fisher-boats of it, and with rubbing two pieces of this wood together, kindle fire as we do with a Flint and Steel; yet it neither burns nor consumes.

As for the *Coco's* or *Walnut* of *India*, it furnishes them with all things necessary for mans life; they extract from it *Wine*, *Honey*, *Sugar*, *Milk*, *Oyl*, and *Butter*. Its Kernels they eat instead of Bread, with all sorts of Meat; the Leaf being green, serves for Paper to write; being dry, they fold it in little Bands, and make *Panniers*, *Dossers*, *Umbrellas*, *Hats*, *Coverlids*, and *Carpets*; the Sprig which is the middle of the Leaf, being dry, hardneth, and of it they make *Cabinets*, *Chests*, and other Moveables; of the Shell, which incloses the Fruit, they make *Ladles*, *Spoons*, *Plates*, *Cups*, &c. They may build a whole House out of these Trees; the Trunk may serve for Beams and Joynts; the Branches cut in two or three for Pails, to pail in Gardens or Houses, and for Laths to cover them; and the Leaves sewed together and disposed in ranks upon those Laths, cast off the Water as well as our Tiles. They build likewise many Ships only out of the *Coco-Tree*; the Keel, Sides, Planks, Pins, Haiches, Masts and Tards, Cordage, Anchors, Sails, and even all the Utensils of a Ship, are taken from this Tree; and sometimes their Lading, whether for Provision or Moveables, or to furnish Rigging for other Ships, is likewise taken out of this Tree alone.

And so much for the Eastern Isles and all Asia.

AFRICA

Provision very plentiful.

Shells pass for great use for Money.

The Coco-Nut and Tree of great use for several things.

AFRICA,
as it is di-
vided into

AFRICA,
or
LIBYA,

Exterior or
Outward,
and compre-
hendeth

BARBARY, which
containeth the King-
doms of

BILIDULGERID,
which containeth sever-
al Kingdoms and Pro-
vinces, the chief of
which are,

E G Y P T, which is di-
vided in

ZAARA, or SAARA,
where are the King-
doms and Cities of

Interior, or
Inwards, and
compre-
hendeth

The Land
of N E-
GROES,
where are
the King-
doms,
People or
Countries

On this side
the Niger, as
of

Between the
branches of
the Niger, as of

Beyond the
the Niger, as
of

G U I N E E, with its
Kingdoms, Parts, and
chief Places of

N U B I A, where are the
Kingdoms, Countries,
and Cities of

Higher, or
under Egypt,
and compre-
hendeth

The Empire of the A-
B I S S I N E S, where
are several Kingdoms,
Countries, and Cities;
the chief of which are,

ÆTHIOPIA,

BARBARY, or ZAN-
G U E B A R, which is
divided into

C O N G O, with its sever-
al Kingdoms or Pro-
vinces; the chief of
which are,

Lower, or In-
terior, and
compre-
hendeth

The Coast and Country of C A F R E S, with its
several Estates, Kingdoms, Capes, Ports, and Isles;
the chief of which are the

M O N O M O T A P A,
with its Kingdoms and
chief Places of

In divers
ISLES

In the Mediterranean Sea,

In the Western Ocean, as the

In the Eastern Ocean, as

Morocco,	Morocco,
Fez,	Fez,
Telenfin,	Telenfin,
Algier,	Algier,
Tunis,	Bugia,
Tripoli,	Tunis,
Barca,	Tripolis,
Defart of Barca,	Barca,
Sus, or Tesser,	Ammon,
Darha,	Tesser,
Segellomeffa,	Darha,
Tahlet,	Segellomeffa,
Tegorarin,	Tahlet,
Zeb,	Tegorarin,
Bilidulgerid,	Nesta,
Sayd, or Bechria,	Fezen,
Errif,	Gadomes,
Coast of the Red Sea,	Cairo,
Zanhaga,	Alexandria,
Zuenziga,	Rosetta,
Targa,	Sucs,
Lempta,	Grodol,
Berdoa,	Tegassa,
Gaoga,	Zuenziga,
Borno,	Targa,
Gualate,	Lempta,
Genchoa,	Berdoa,
Tombut,	Gaoga,
Agades,	Borno,
Canun,	Gandia,
Cassena,	Genchoa,
Gangara,	Genehoa,
The Jalofo People,	Tombotu,
The Biatares People,	Agades,
The Soufoes People,	Canon,
Melli,	Cassena,
Mandinga,	Gangara,
Gago,	Solul,
Guber,	Biatares,
Zegzeg,	Beria,
Zanfara,	Melli,
Melegutte,	Mandinga,
Particular Guinee, or the	Gago,
Ivory Coast,	Guber,
Benin,	Zegzeg,
Bugia,	Zanfara,
Jalac,	Bugos,
Nuabia,	St. George de la Mina,
Dancala,	Cape of Palma,
Cufa,	Benin,
Gorham,	Bugia,
Damocla,	Jalac,
Somna,	Nuabia,
Tigremahon,	Dancala,
Barnagasso,	Cufa,
Angora,	Gorham,
Dancala,	Damocla,
Amara,	Somna,
Bagamedri,	Chaxumo,
Ambian,	Barva,
Damute,	Angorina,
Agag,	Degibeldara,
Cafates,	Amara,
Narea,	Baza,
Ambiam,	Amfen,
Zanguebar, with its King- doms and Cities of	Damute,
The Coast of AJAN, with its Kingdoms and Cities of	Agag,
The Coast of ABEX, with its chief Places and Isles of	Cafates,
Loango,	Zeb,
Pemba,	Ambiam,
Angola,	Mozambique,
Bamba,	Quiloo,
Songo,	Quilmanca,
The Coast and Country of C A F R E S, with its several Estates, Kingdoms, Capes, Ports, and Isles; the chief of which are the	Adca,
Monomotapa,	Adel,
Butua,	Magadoxo,
Monoemugi,	Arquico,
Zefala,	Suaquen,
Chicanga,	Loango,
Malta,	Pemba,
Canary Isles,	Engaze,
The Isles of Cape Verd,	Bamba,
The Isle of St. Thomas,	Sonho,
Madagascar,	Cape of Good Hope,
Zocotora,	Cape of St. Nicholas,
	Port of Caracalis,
	Isles of St. Christophers,
	Isles of St. Lucia,
	Monomotapa,
	Butua,
	Agag,
	Zefala,
	Zimbaos,
	Valetta,
	Canaria,
	St. Jago,
	Pavoafaa,
	Vingagora,
	Zocotora,

AFRICA.



OCEAN OCCIDENTAL

or

the

ATLANTIC

SEA

SEA

Equator or Aequinoctial Line

SEA of GUINEE

AMERICA

I. de Farnando de Lorocho

Bio Grande
Potengi
Paranba
Obinda
C. de S. Agustin
S. Francisco
S. Salvador

I. de S. Helena

S. Maria de Aguiar

I. de Martin Vax

I. dos Picos

A. Trindade

I. de Acemeam

I. de S. Helena

S. Maria de Aguiar

I. de Martin Vax

I. dos Picos

I. de Afencion

I. de S. Mathieu

I. de S. Mathieu

I. de S. Mathieu

I. de S. Mathieu

I. de S. Mathieu

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I. de S. Mathieu





To the Right Hon^{ble} Charles Howard Earle of Carlisle
Viscount Morpeth Baron Dacres of Gifford Lord Lieutenant
of Cumberland & Westmorland Vice Admiral of the Coast of Northum-
berland Cumberland Westmoreland Bishoprick of Durham Town
and County of Newcastle and Marischall parts adjacent & one of
the Lords of his Ma^{ties} most Hon^{ble} Privy Councill &c.
J. H. S. Mapp is most humbly D.D. by R. B.

MERIDION

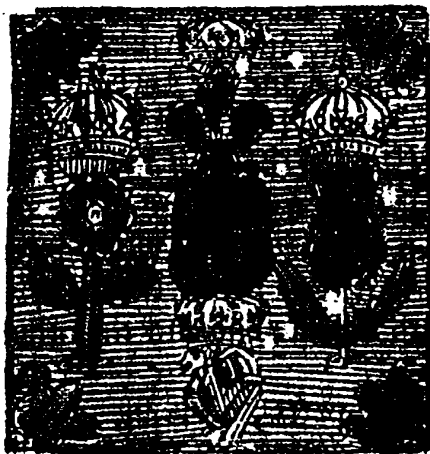
I de Trist^{ma} de Cunha

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Alvarez

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AFRICA.



AFRICA is a *Peninsula* so great, that it makes the Third and most Meridional part of our Continent: It approaches so near to *Spain*, that only the Streight of *Gibraltar* divides them; and touches so little upon *Asia*, that only an *Isthmus* of 30 or 40 Leagues, between the *Red Sea* and the *Mediterranean*, joyns them together.

Besides this *Isthmus*, *Africa* is bounded on all sides by the Sea, as appears by the Map. The *Latins* called it most commonly *Africa*, and the *Greeks*, *Libya*; yet both the one and the other

are indifferently found in the Authors of the one and the other Tongue. The first was given by one *Afer*, descending from *Abraham* and *Kethura*; others say, of one *Afer*, Son of the *Libyan Hercules*; or (according to the *Greeks*) it is taken from *ἄνευ φέρονς*, that is, *Sine Frigore*, because (according to its situation) it must be without Cold. According to the *Arabs* the name should be taken from *Ifriquia*, that is, *Divided*; because were it not for that *Isthmus* which joyns it to *Asia*, it were quite divided from our Continent. According to the *Punick* Tongue it signifies the Land of *Corn*, for the abundance of *Grains* gathered in that particular part called *Africa*.

The name of *Libya*, is taken either from *Libya*, the Daughter of *Epaphus*, the Son of *Jupiter*; or from *Libya*, one of the three Lakes which descend into the River *Triton*; or from *λύβη*, which in the ancient *Greek* Idiom signifies *Black*, because its Inhabitants are Black; or from *Lub*, which among the *Arabs* signifies Thirst, because a good part of the Country wants Water. But these Histories, Fables, and Etymologies, are taken from divers Authors of divers Tongues; and for different Reasons there may be new ones found or made, to content those which are covetous of them.

The Form of *Africa* is near Triangular, yet it advances four *Promontories* to the four principal places of the World. *Cape Bona*, towards the North; the *Cape of Good Hope*, towards the South; *Cape Guard a Fuy*, towards the East; and *Cape Verd*, towards the West: the three last are on the Ocean, and the first on the *Mediterranean* Sea.

Its length, taken from *Cape Verd* to *Cape Guard a Fuy*, is about 2000 Leagues. Its breadth, from *Cape Bona* to that of *Good Hope*, is about 1800 Leagues; but

Its Bounds.

Its Name.

Its Form and Promontories.

Its length and breadth.

Its Situation.

but both its length and breadth, are found much less in all other places. Its situation is under or about the *Torrid Zone*; the *Equinoctial Line* passing over it, and cutting it in two, though unequal parts. The most part of *Africa* is between the two *Tropicks*, which it out passes $11\frac{1}{2}$ Degrees, and and 15 Degrees on one and the other side, to wit, $11\frac{1}{2}$ Degrees beyond the *Tropick of Capricorn*, and 15 on this side that of *Cancer*.

How Inhabited.

It is every where inhabited, though not so well as *Europe* or *Asia*; whether by reason of the insupportable Heats which reign there, or because it hath many Countries dry and without Water; or because it hath others, where there is much *Sand* easily removed by the Wind, often burying Men in it; or by reason of the great number of venomous, fierce, and cruel Beasts, which are found through the whole; or because they sell and transport one another for Slaves, I leave to judge.

Its Division.

It is moreover observable, that it is fresher and cooler under and about the *Equator*, than under and about the *Tropicks*. The reason is, because the Sun makes two Summers and two Winters, under and near the *Equator*; and that the Nights are equal to the Days, which is a great refreshment.

Divers Authors divide *Africa* in a very different manner; yet most agree to make first the Division into two great parts, calling that *Oriental* which is on the East of the *Nile*, and that *Occidental* which is on the West; others by the *Equator*, calling it *Northern* on this side, and *Southern* on the other side the *Equator*: Others by the *Colours* of the People, observing that on this side the *Tropick of Cancer* they are *white*, and beyond it *black*. But all these Divisions have many faults, to avoid which, and to make our Division of *Africa* into two great Parts, agree with that of ancient Authors, and with the disposition in which the Country is now found, I draw a Line from the Gulph of *St. Thomas* unto the extremity of *Egypt*, on the *Red Sea*. This Line carried along where the Estates are distinguished one from the other, divides *Africa* into two equal parts, cuts no Estate in two; and that which is on this side is called by the Ancients, and by the Modern more precisely, *Africa* or *Libya*; that which is beyond this, is called both by the one and the other *Ethiopia*.

This first Division will facilitate those of the other parts, dividing *Africa* or *Libya* into two, and *Ethiopia* likewise into two; *Africa* or *Libya* into the higher and farther, in regard of us; and exteriour and interiour in regard of those of the Country. *Ethiopia* into high and low, according to the Moderns, or into *Ethiopia* under *Egypt*, and *Ethiopia* Interiour, according to the Ancients.

Its Parts, and their bounds.

In the Higher and Exteriour *Africa* or *Libya* we have *Barbary*, *Billedulgerid*, and *Egypt*: In the Farther and Interiour *Africa* and *Libya*, *Saara* or *Desart*, the Country of the *Negroes* and *Guinny*. In the Higher *Ethiopia*, or under *Egypt*, are *Nubia*, *Abissina*, and *Zanguebar*: In the Lower or Interiour *Ethiopia*, *Congo*, the *Mono-Motapa*, and the *Cafres*.

Barbary extends it self along the *Mediterranean Sea*, from the *Ocean* unto *Egypt*, and is bounded on the South by Mount *Atlas*. *Billedulgerid* lies along this Mountain, likewise from the *Ocean* unto *Egypt*, bounded on the South by *Saara* or *Desart*. *Egypt* is only one Valley, from the *Cataractes* of *Nile* unto the *Mediterranean Sea*. This last part hath retained its ancient name; the other two put together, answer to what the Ancients called *Mauritania*; *Africa proprie dicta*, and *Libya* likewise *proprie dicta*: so that the most Western parts of *Barbary* and *Billedulgerid* together make *Mauritania*, the Middle *Africa*, and the most Eastern *Libya*.

Likewise *Saara* or *Desart*, the Country of the *Negroes* and *Guinny*, stretch themselves from the *Ocean* unto the High and Low *Ethiopia*: And the most Western part of *Saara* answers to the ancient People *Gatuli*, the Eastern part of *Garamantes*. The Country of the *Negroes*, to *Nigritarium Regio*: *Guinny* to many People, of which the most famous have been the *Perorfi*. This *Guinny* is 750 Leagues long: The Country of the *Negroes* near 1000: *Saara*, *Billedulgerid*, and *Barbary*, each 11 or 1200 Leagues; their

their breadth being only 100, 200, or 300 Leagues. The length of *Egypt* from South to North is not above 200 Leagues. Its breadth, if we esteem it only the Valley along the *Nile*, is very narrow; and sometimes only 5, 10, sometimes 12 or 15 Leagues.

We have divided *Ethiopia* into the Higher and the Lower, placing in the Higher, *Nubia*, *Abissina*, and *Zanguebar*; in the Lower, *Congo*, *Mono-Motapa*, and *Cafres*: *Nubia* is for the most part on this side; and to the West; *Abissina* above, and *Zanguebar* beyond the *Nile*, and in the most Eastern part of *Ethiopia*. *Congo* makes the most Western part of *Ethiopia*; the *Mono-Motapa*, and *Cafres*, the most Southern: This on the Coast, the other within Land.

Nubia, *Abissina*, and *Zanguebar* together, answer to the *Ethiopia sub-Egypt* of *Ptolomy*; *Nubia* to the most Northern part, and nearest to *Egypt*; *Abissina* more Southern; *Zanguebar* to that which is on the Coasts, and there where *Ptolomy* describes the Regions of *Barbary*, *Azania*, and *Troglo-dittica*; which answer to the particular *Zanguebar*, on the Coast of *Ajan*, and the Coast of *Abex*; which we esteem under the general name of *Zanguebar*. In the Lower *Ethiopia*, *Congo* answers to the *Heperis Ethiopes*, the *Mono-Motapa* to *Agisymba Regio*, the *Cafres* to the *Anthropophagi Ethiopes*.

The Coast of *Cafres* reaches 1200 Leagues; the *Mono-Motapa* is 4, 5, or 600 long and broad; *Congo* 6 or 700 long, and 300 large; *Nubia* 400 long, and 200 broad; *Abissina* 7 or 800 long, and 4 or 500 broad; The Coast of *Zanguebar* stretches 15 or 1600 Leagues, with not above 100 of breadth, like to that of *Cafres*.

The Mountains of *Africa* are in great number, and very remarkable, both for their height, extent, the Metals wherewith they abound, and other particulars. The most famous are *Atlas*, those of the *Moon*, and *Serre Leone*.

Atlas was the most famous Mountain among the *Ancients*, who believed it bounded the World on the South. Its name was taken from *Atlas*, King of *Mauritania*, whom *Perseus* turned into a Mountain, by making him see the Head of *Medusa*; and because he had been an *Astronomer* the Poets feigned, that he bore up the Heavens. It is true, this Mountain is so high that it seems to touch the Skies; it extends it self from the *Great Sea* or *Occidental Ocean*, to which it hath given the name of *Atlantick*, even near to *Egypt*; for the space of more than 1000 Leagues, leaving *Barbary* on the one side, and *Billedulgerid* on the other; casting forth branches under divers names on both sides. There is the Great and Little *Atlas*.

The Mountains of the *Moon*, now of *Beth*, are higher than any of *Europe*, and are alwaies covered with *Snow* and *Ice*: But these Mountains make divers branches towards the *Cape of Good Hope*; they are called *Picos Fragosos*; towards the East of *Congo*, the Mountains of *Chrystal*; above the Lakes of *Zaire* and *Zaffan*, the Mountains of the *Sun*; and of *Salt-Peter*; and it may well be, that the highest between *Abissina*, the *Mono-Motapa* and *Cafreria*, retain the name of the Mountains of the *Moon*.

The Mountains of *Serre Leone*, by the *Portugals*, *Sierre Lioa*, are the *Chariot of the Gods* of the *Ancients*: And this name was given, because from their top they send forth continual *Lightnings* and *Thunders*; as if the *Gods* could not march with less noise. Their principal ridge is between the Country of the *Negroes* and *Guinny*, where they make two Branches; one advancing into the Farther *Africa* or *Libya*, and the Higher *Ethiopia*; the other between the Higher and Lower *Ethiopia*: this seeking the Mountains of the *Moon*, the other *Atlas*.

The largest and most famous Rivers of *Africa* are the *Nile* and the *Niger*; the *Nile* hath been known in all times. Ancient and Modern Authors have been troubled to tell where its Head-spring is, and more to give the reason of the Increase and Decrease of its Waters; we will speak something of it in *Egypt*. Its course is 1200 Leagues in a straight line, and little less than 2000 in its turnings: It descends from the Lake *Zaire*, traverses the Higher *Ethiopia*, its

Its chief Mountains, viz.

Atlas

The Mountains of the Moon.

The Mountains of Serre Leone.

Its chief Rivers, viz. The Nile.

Nubia, and *Egypt*, and falls with several Mouths into the *Mediterranean*; about the middle of its course it embraces the Isle of *Meroe* or *Gugure*: And this Isle hath many Estates and Signories, and may boast it self the greatest and fairest of all River Isles that we have knowledge of.

The Niger.

The *Niger* hath its Springs in the Kingdom of *Diamont*, above the Lake *Niger*, and not far from the *Nile*, when it is out of the Lake of *Zaire*. This *Niger* doth in some part divide the Higher *Ethiopia* from the Lower, approaches *Nubia*, and the Countrey of the *Negroes*; hitherto rolling its streams from South to North, till losing it self in the Earth, it rises again near the Lake *Borno*; turns its course, and continues it to the West, traversing the whole Country of the *Negroes* 200 Leagues from the Sea, it divides it self into many Branches, which have divers names, and falls into the *Ocean* between the 11th and 16th degrees of *Latitude*. Its course is a little longer than that of the *Nile*; its streams more violent, and hath the same property of overflowing and satining the Earth; engenders the same Creatures, but not so strong; hath grains of *Gold* in its Sand: But the Country which it traverses is neither so well habited, rich, nor known, as that of the *Nile*. Some believe the *Nile* and the *Niger* come from the same Springs, and that they begin not to divide but between the Higher and Lower *Ethiopia*; one continuing its course towards the North, the other turning from East to West: So the *Arab* of *Nubia* calls both, *Nile*; and to distinguish them adds, *Nile* of *Egypt*, and *Nile* of the *Negroes*.

The Zaire.

The other Rivers of *Africa* are not to compare with these. *Zaire* in *Congo* may be considered for the quantity of Waters it streams down, and for the greatness of its Mouth at the Sea, and so some others: but let us pass to the *Promontories*.

Its Promontories.

We have already touched a word or two on the principal ones, to wit, the Capes of *Bona*, *Hermea*, *Promontorium*, *Cape Verd*, *Arinarium Prom*, *Gard a Fuy*, *Aromata Prom*; (this Name was given, because of the *Drugs* and *Spices* of the East, which passed before this Cape to defend by the *Red Sea* into *Egypt*, and from *Egypt* into the *Mediterranean*, and through all the West,) and of the *Cape of Good Hope*, of which the *Greeks* and *Latins* have had no certain knowledge, much less those before them; nevertheless we find some Authors among the Ancients, who would make it appear that the *Barbarians*, that is, the stranger Nations, have made (or caused to be made) the Circumnavigation of *Africa*, which could not be done without knowing of this Cape.

The Emperours and Kings which possess Africa.

The Kings, Emperours, or Princes, which at present possess *Africa*, are in very great number; the most powerful and considerable are the *Great Turk*, or *Sultan* of the *Ottomans*, who holds all *Egypt*, a great part of *Barbary*, and almost all the Coast which touches the *Red Sea*. The *Negus* of the *Abissines*, who possesses the fairest and greatest part of the Higher *Ethiopia*: the *Xeriffs* of *Fez* and *Morocco*, which have held those two Kingdoms in *Barbary*, and likewise *Dara*, and *Segelmesse* in *Billedulgerid*. The King of *Tombuti*, among the *Negroes*: the *Mona*, or *Mani*, that is, Kings of *Congo*, *Monotapa*, and *Emugi*; and the *Soba* of *Angola*, in the Lower *Ethiopia*; he of *Adel*, in the Coast of *Ajan*; besides which there are many *Xeques* of the *Arabs*, many free and vagabond People, who (for the most part) live without Chiefs, Faith, or Law.

The Kings of *Cassile* and *Portugal* hold many places on the Coasts of *Africa*; those of *Cassile* hold some on the *Mediterranean Sea*; those of *Portugal* hold a great number on all parts of the *Ocean*, which encompass *Africa*; but the *Hollanders* have taken some from them, and others are delivered to the *English*.

Languages or Tongues spoken in Africa.

Amongst a great number of different Tongues that are in *Africa*, the three or four principal and most general ones are the *Berberic* or *African*, which comes from the Ancient *Punic*, the *Arabic* and *Ethiopian*. The *African* and *Arabic* extend themselves through all *Barbary*, *Billedulgerid*, *Egypt*, and *Saara*, according as the People of those Countries, descend from the *Africans*.

Africans or *Arabs*. The *Ethiopian* is in the greatest part of *Ethiopia*; if it be not on the Coasts, where the commerce and confluence of Strangers hath long since changed the Tongue: But the *Negroes* seem to have a particular Language. These Tongues have divers Idioms, and very different the one from the other; all (or at least the three first) descending from the *Hebrew*, or Tongues derived from it.

Their Religions.

The Religions which have course in *Africa* may be reduced to four; *Mahometism*, *Paganism*, *Christianity*, and *Judaism*. *Mahometism* possesses *Barbary*, *Billedulgerid*, *Egypt*, *Zaara* or the *Desart*; part of the *Negroes*; and a good part of the Coast of *Zanguebar*. *Paganism* holds part of the *Negroes* and *Nubia*, *Guinny*, and almost all the Lower *Ethiopia* (I comprehend the *Cafres* with the *Pagans*;) part of *Zanguebar*, and some mixture other-where. *Christianity* holds in *Africa* almost the whole Empire of the *Abissines*, part of *Egypt*; but the most part *Schismaticks*; and along all the Coasts of *Africa*, where the *Portugals* are the strongest, they have introduced *Christianity*: as in *Congo*, *Angola*, and some Coasts of the *Cafres* and *Zanguebar*. As for *Judaism*, it is scattered in many Cities on the Coasts of *Barbary*; as at *Morocco*, *Fez*, *Algier*, &c. Likewise in *Egypt*, and on the confines of the *Abissines* and the *Negroes*, they have the Kingdom of *Ximen* tributary to the *Abissines*; but the *Jews* are but a small number in *Africa* in comparison of the others. I make account that *Africa* being divided into 16 equal parts, *Mahometism* would possess 5 or 6, *Paganism* 6 or 7, *Christianity* 3, and *Judaism* only one.

AFRICA, as it is at this day known, may be divided into these 8 parts following, viz. 1. *Barbary*, (in which is found the Kingdoms of *Morocco*, *Fez*, *Algier*, *Telensin*, *Tunis*, *Tripoli*, and *Braca*.) 2. *Billedulgerid* or *Nubidia*. 3. *Egypt*. 4. *Zaara* or *Libya Interior*, in which is comprehended the Country of the *Negroes*, *Guinny*, with some certain Isles. 5. *Nubia*. 6. The Empire of the *Abissines*, or the higher or greater *Ethiopia*, in which I comprehend *Zanguebar*. 7. *Ethiopia* the Lower, in which are found the Kingdoms of *Congo*, the Empire of the *Monomotapa*, the Land of *Cafres*: And 8. and lastly, the Isles of *Africa*. And of these in order.

Its division into Parts, as at this day known.

Under

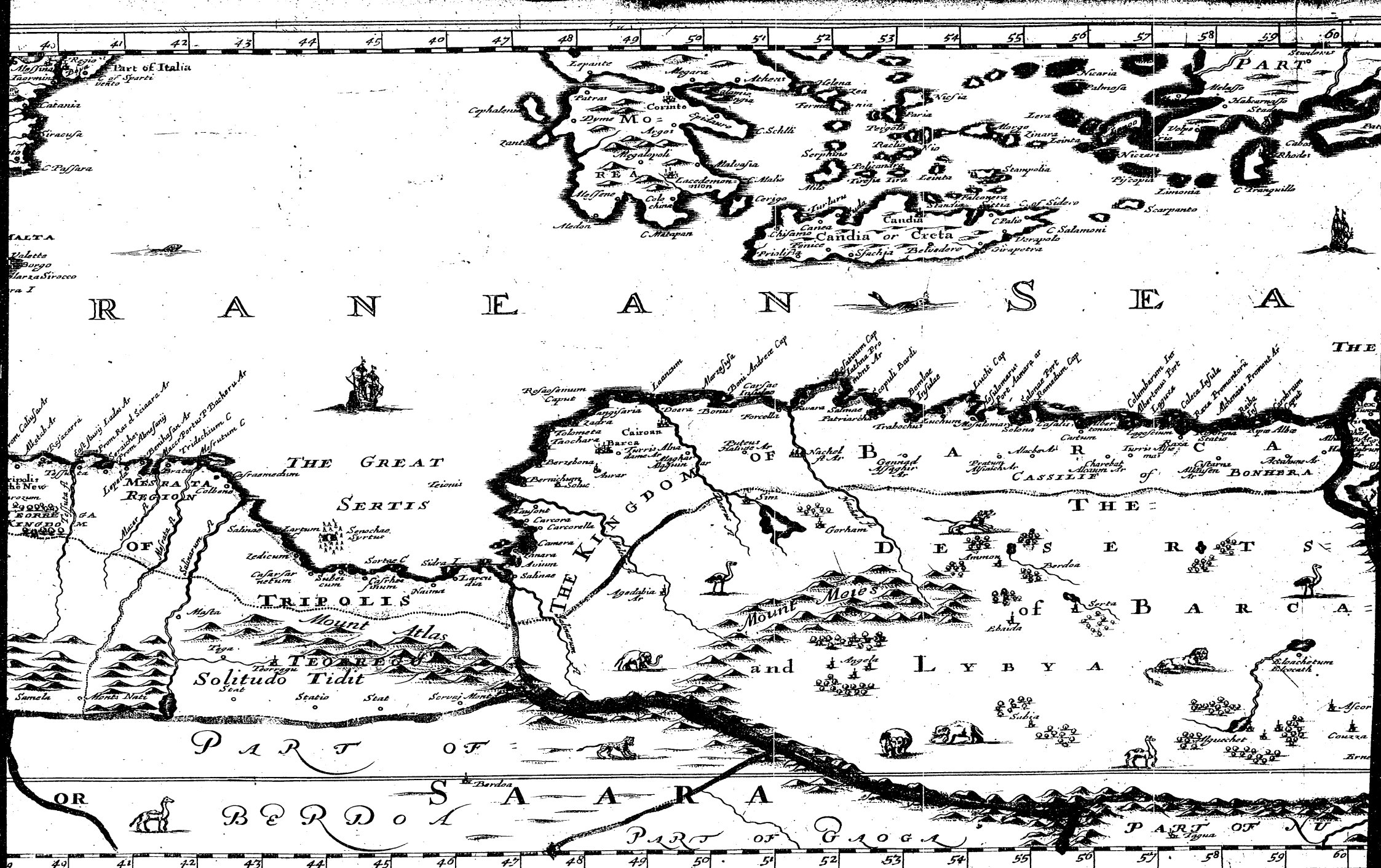
Under the Name of BARBARY, are comprehended several Kingdoms, to wit,	The Kingdom of MOROCCO, wherein are several Provinces; and which may be considered as they lie	On the Sea, as	Sufa,	Taradante, Mella, Tagavostum, Tojouta, Gartguellum, Tednest, Teculctum, Goza, Tefethna, Guzula.	
		Within Land, as	Guzula,	Morocco, Agmer, Elguimha, Temella, Elmadrina, Tagodast, Teiza, Tedza, Azamor, El Medina, Afafi.	
			Morocco,		
			Hascora,		
	The Kingdom of FEZ, with its several Provinces; which may be considered as they lie	On the Ocean, as	Temefine,	Anfa, Almanfor, Rabarr, Adendum.	
		On the Streight of Gibraltar,	Fez,	Fez, Mahmora, Salla, or Sally, Cafar-el-Cabir, Lharais, Arzila, Tangier, Tettinguina, Gomer, Bedia, Mellila, Fetis, Teza, Dubdu, Garfis, Telenfin, Oran, Marfalquibir, Guagida, Batha, Tenefa, Serfela, Melliana, Algier, Temenduffa, Teddelest.	
			On the Mediterranean Sea, as	Afgar,	
			Errif,		
	The Kingdom of ALGER, with its Provinces; which may be considered as they lie	In the Middle, as	Garret,		
			Up within Land, as	Chaus,	
On the West, as			Telqasin, with its Quarters	Telqasin, Hanghad, Beni-Rafid.	
			Tenez,		
On the East, as		Algier,			
		Bugia,	Bugia, Chollum, Gergelum, Steffa, Constantina, Bona, Tabarca, Tebeffa.		
		Constantina,			
		Benferta,	Benferta, Tunis, Goletta, Sufa, Hamametha, El-Media, Beijs, Urbs, Arbes, Mufti, Marmagena, Cayroan, Cafsa, Hama, Capes, El-Hamma, Tripolis the New, Lepeda, Tripolis the Old, Camera, Bernichum, Torachara, Tolometa, Zadra, Barca, Cayroan, Boni-Andreas, Mufelomarus, Albertonus, Roxa, Ripzalba, Ammon, Gorham, Angela, Alguchet, Erner, Sertz, Afcor, Ebaida, and Couzza.		
The Kingdom of TUNIS, with its Governments; and which may be considered as they lie		On the Sea, and are Maritim, as	Goletta,		
		Within Land, as	Soufa,		
	El-Media, or Africa,				
	Beijs, or Bege,				
The Kingdom or Province of TRIPOLI, whose chief Maritim places are those of	The Kingdom of BARCA, as it regards the Sea, and makes the most Eastern Coast of BARBARY, whose chief places are	Urbs,			
		Mufti,			
		Marmagena,			
		Cayroan,			
The Country of BARCA, or LIBYA, which may be divided into	The Defart of BARCA, within Land, more Southward, and under the Tropick of Cancer; whose chief places are,	Cafsa,			
		Hama,			
		Capes,			
		El-Hamma,			



A GENERAL MAPP OF THE COAST OF BARBARY, SEGELMESSE, AND DARHA; With the Circumjacent



BARBARIE, WHERE IN ARE THE KINGDOMS, AND ESTATES OF MOROCCO, FEZ, ALGI
ent Counteries. By Mounfieur Sanfon Geographer to the French King; and Rendred into English, and Illustrated By I



ALGER, TUNIS, AND TRIPOLIS. ALSO THE KINGDOMS, ESTATES, AND DESERTS OF BARCA
By Richard Blome. By his Majesties Speciall Command.
London Printed for Ric. Blome A. 1667.



OF BARCA, EGYPT, LIBYA, BILEDULGERID

Francis Lamb Sculpit

MOROCCO.

THE Kingdom of *MOROCCO* is the most Western part of *Barbary*, bounded by the *Ocean*, the River *Sus*, Mount *Atlas*, and the River *Ommiraby*: The *Ocean* washes it on the West; the River *Sus* separates it from *Tesset* on the South; Mount *Atlas* divides it from *Darrha*, and *Segelmesse*, on the East; and the *Ommiraby* from the Kingdom of *Fez*, on the North.

It is divided into 7 *Provinces*: those of *Sus*, *Hea*, *Guzula*, and *Morocco*, are between the Rivers of *Sus* and *Tensift*; the two first on the *Sea*, and the other within *Land*. The *Provinces* of *Teldes*, *Hascora*, and *Ducala*, are between *Tensift*, and *Ommiraby*: the two first up in the *Land*, the other on the *Ocean*: and these three last stretch towards the North and East; the four first towards the South and West.

1. The *Province* of *Sus* is about the River *Sus*, and is sometimes extended as far as *Cape de Non*. *Taradante*, not far from *Atlas*, is esteemed the chief City of this *Province*, its *Gouvernours* and *Kings* having here made their residence; much enriched of late by the *English* and *French Merchants*, who have here a *Staple* for their *Sugars*. The *Town* is large and well built, seated in a spacious *Plain*, which affordeth great plenty of *Sugar*. 2. *Messa*, at the flux or mouth of the River *Sus*, it is composed of three little *Cities* walled apart; and betwixt which the River passes. 3. *Tesent*, seated higher; and on the same River, on a spacious *Plain*, is likewise composed of three *Towns*, each distant a *Mile* from each other, having their *Temple* common in the midst of the three. 4. *Tedsa*, beyond the River *Tagavost*, containing about 8000 *Houses*; its chief *Ornament* being a fair *Mehometan Temple*. 5. *Capo d' Aguer*, seated on a *Promontory* so called, and is a place of great importance.

The *Fortress*, and City of *Guarguessen* in the midst of the *Coast*, and on a branch, which this *Mountain* under the name of *Idevacall*, stretches into the *Sea*, belongs to the *Crown* of *Portugal*.

The *Province* of *Guzula* is to the East of *Sus*; to the South of *Hea*, and *Morocco*; to the West of the *Province* or Kingdom of *Darrha*; and to the North of *Tesset*. Here are observed to be no walled *Cities*, or *Fortresses* of note; but it hath many *Burroughs* and *Towns* of 1000 or 1200 *Houses*: where there are *Markets* kept thrice a week, and a great *Fair* yearly, which lasts two Months; to which many *People* from most parts of *Africa* do resort. The chief place bears the name of the *Province*; the *People* are rude and barbarous, and with much ado are subject to the King of *Morocco*. In the *Country* are many rich *Mines* of *Gold*, *Brass*, *Iron*, and other *Metals*.

The *Province* of *Morocco*, particularly so called, lies all between the Rivers of *Asifnuall*, and *Tensift*; from their Springs at the Mount *Atlas*; until they meet about 15 or 20 *Leagues* from the *Sea*; *Asifnuall* divides it from *Guzula*, and *Hea*; *Tensift* from *Hascora*, and *Ducala*. The City of *Morocco* is the chief of the whole Kingdom, and hath been a long time in great esteem, and once accounted the *Metropolis* of all *Barbary*, and reckoned amongst the greatest *Cities* in the *World*. At which time it had twenty four, or twenty five *Gates*, being in circuit 12 *Miles*, and contained about one hundred thousand *Families*. It is strongly girt about with *Walls*, and adorned within with many publick and private *Buildings*; as, its *Palace*, which

Kingdom of
Morocco, its
bounds.

Its *Provinces*.

Province of
Sus, its chief
places, &c.

Province of
Guzula, its
bounds and
chief Places.

Province of
Morocco, and
its chief
Cities.

Morocco, its Trade and Commodities.

which they name the *Alcasar*. Its Churches or Mosques are very fair, especially one, which is held the greatest in the World, seated in the midst of the City, adorned with many sumptuous Pillars, which were brought out of Spain when the Moors had the possession of the Country. It hath a very large and strong Castle, esteemed as big as a reasonable Town. Here is also a Bourse for Merchants, who trade hither. But of late, by reason of the desolament and Spoils which it hath suffered by the Arabians, together with the removal of the Seat Royal to Fez, now the Metropolis of all Barbary, it hath lost much of its splendor, a great part of the City being deserted, so that they make use of but 4 or 5 Gates; neither is that part so populous, rich, nor hath so good a Trade as formerly. 2. *Agmet*, seated on a River of the same name; and at the meeting of divers passages which descend from Mount Atlas in the Plains of Morocco, hath been very fair and populous, and its Hills and Valley about it so fertile, and beautified with pleasant Gardens, that it was called the Little Morocco; at present it is almost Desert. 3. *Elgiumba*, near the Mountain, and on the River *Sejiva*. 4. *Imgiagen*, seated on a Mountain very steep on all sides: And, 5. *Tenezze*, a Town of some note. All which are strong places, and very advantageously situated.

Province of Fez, its fertility, People, and chief places.

HEA, West of Morocco; a Province Mountainous and Woody, yet watered with many good Rivers; the Soil indifferently fertile, and would produce several good Commodities, were it inhabited by industrious People; these being a sort of idle and in a manner barbarous, altogether ignorant of Arts, except some Teachers of their Law, which can hardly read; as also some Chirurgions, who are chiefly employed in the circumcision of their Children; they are generally very courteous to Strangers, but very contentious among themselves. Its chief Cities are, 1. *Tednest*, once a place of good esteem, seated on the River *Savens*. 2. *Hadequis*. 3. *Tegulath*: and, 4. *Tejent*, places of good note and Trade, the first containing about 1000 Houses, having the benefit of a good Port, and beautified with a fair Mosque, with some Hospitals. But about the year 1500 they were much ruined by the Portugals, in whose possession they are, who have since somewhat added to its former Estate. *Tednest* hath about 1600 Houses, the most part Jews, which are esteemed the chiefest. In the Mountains, *Tesgedet* is most considerable, containing above 1000 Families, and well situated; its Walls being no other than thick Rocks. So are *Ilesugagen*, *Tegesse*, *Eitdeset*, *Culejat*, &c. situated upon Mountains, and of good strength. *Tesethna*, on the Coast, and at the Mouth of a River of the same name, hath a Port, where there is some Trade. The Isle of *Mogadour*, near the Cape of *Ocem*, is distant from the Coast two little Leagues. The Kings of Morocco have built here a Fortress to keep some Mines of Gold and Silver which are in the neighbouring Mountains.

The Isle of Mogadour.

Its Mountains well inhabited.

Provinces of Hascora and Teldes, and their chief places.

Its People.

The Mountains of *Aidvacall* or *Idevacall*, near Cape de Guer; of *Demenfara*, near the Province of *Guzula*, and *Gebel el Haden*, near the *Tensit*, take up a part of the Province; and are so well inhabited, that the last can set forth 12000 fighting Men, the first 20000, and the other 25000.

North of the Province of Morocco are those of *Hascora*, and *Teldes* separated the one from the other by the River *Quadel Habid*. *Tefza* is the chief City of *Teldes*, and near the River *Derna*, which falls into the *Ommiraby*; a rich City, built by the old African Moors, and beautified with many Mahometan Mosques; and its Walls were made of a kind of Marble. 2. *Elmadine* is the chief City of *Hascora*, peopled with about 10000 Families, situated in a pleasant Valley, and begirt with Hills; it is well built; its Inhabitants are civil, ingenious, and addict themselves to Arts, Traffick, and Manufactures: the Women are fair, as in 3. *Tagodast*, which is on a Mountain, whose Foot is washed with many little Streams, which water their Gardens. 4. *Elgiumba*, towards the South, built by the People, and in a like situation with *Tagodast*. And, 5. *Bzo*, likewise a City of some Trade. Between the Mountains *Teldes* hath more than 50 walled Towns, built near the streams of the River *Darba*. These Provinces are fertile, having rich Fields, feed a great quantity of Goats, of whose Skins are made the *Cordovants*, and of their Hair, plain and watered Cham-

Cham-

Chamlets; also store of Cattle, Grains; excellent Fruit amongst others their Grapes as big as Pullets-eggs; they have plenty of Fowl, and their Rivers breed store of Fish.

Ducala the most Northern part of Morocco, and possesses that which is between the River *Tensit*, and *Ommiraby*: a Land fruitful for Grains. Its best Cities are, 1. *Azamor* where the *Ommiraby* enlarges and forms a Gulph to disburthen it self into the Sea, which before the Portugals became masters of it, had above 5000 Houses. It fell again into the hands of the Moors, and entirely restored, having a strong Garrison. 2. *Elmadine* towards the Sea, and in a fair Plain, hath been esteemed the Capital of the Country. 3. *Magrizena-Sanui*, which they have fortified; and on the same Coast have dismantled *Tite*, the easier to fetch in Tribute thence, and from the Neighboring places. 4. *Asaf* or *Satfy* not far from *Tensit*, is strong, and hath a good Trade, where the French hath a Consul.

The Kingdom of Morocco hath suffered great changes, within these few Centuries of years; having been often united, and as often separated from that of Fez. And sometimes likewise its South parts, *Sus* and *Gurula* have made a Kingdom apart. Its principal Ports are those of *Messa*, *Azafi*, *Mazagan* and *Azamor*. Its Promontories those of *Guer*, *Ocem*, *Cantin* and *Carvos*. Its Rivers, the *Sus*, which waters its Southern parts, *Tensit* which divides the Estate in 2 equal parts; and *Ommiraby* which separates it from the Kingdom of Fez.

The Air of the Plains, and Fields of Morocco is much hotter than in Europe, that of the Mountains according to their height is more or less cold. In general this Kingdom is provided with all things necessary for mans life; they have Grains and Pulse in abundance; as also Fruits which are excellent, especially their Grapes. They have likewise Flax, Hemp, Honey, Wax, Sugar, Gold, Silver, Iron, Copper, Marble, Cordovants, Amber, Chamlets and many good Manufactures.

The Kingdom of FEZ.

The Kingdom of FEZ lies between that of Morocco and the Mediterranean Sea; and between the Ocean, and the Kingdom of Telenfin or Argiers. Its Provinces are *Temeshe*, *Fez* and *Azgar* on the Ocean; *Habat* on the Strait; *Erri* and *Garret* on the Mediterranean Sea; and *Chant*, all up in the Land.

Temeshe extends its self from Mount Atlas, unto the Ocean, hath formerly been so flourishing, that it numbered 40 Great Cities, more then 100 middle sized, and 300 little ones, besides an infinite number of Villages.

Besides the intestine Wars of the Country, the Portugals have divers times level'd and ruined the fairest Cities of the Coast, as *Anfa* and *Al-Manfor* in 1468, and afterwards *Rabat* likewise suffered their incursions and Plunders. *Rabat* and its Fortress, are on a Rising ground between the River of *Buragrag*, and the Sea. King *Manfor* caused it to be built after the Modell of Morocco, but much less; and made it one of the most considerable places of all Barbary, erecting many Palaces, Temples, Hospitals, Colleges, Baines, Shops, &c. and without the South Gate a Tower as high as that of Morocco; it was very populous and of a good Trade. And because the Waters round about were salt, he made an *Aqueduct* as beautiful as those about Rome. But at present these fair Edifices are almost ruined, it being possessed with not above 500 families, and much soldiery because of the Neighbourhood of the Portugals; most of the ground within the Walls being turned into Gardens, Vineyards, and Meadows. *Anfa* on the Coast, and in a delightful Plain, hath been one of the most famous Cities of Africa, for its Trade with the English and Portugals; but its being addicted to Piracy, was the cause of its ruine, as of that of *Al-Manfor* on the River *Guir*.

The fertility & Commodities.

Province of Ducala.

Kingdom of Morocco.

Its chief Ports, Promontories and Rivers.

Its Air, Fertility and Commodities.

Kingdom of Fez.

Its Provinces.

Province of Temeshe.

Within the Land, *Muchaila* on the *Guir*, and in the Road from *Morocco* to *Rabat*, hath been rich, well built, with a great Territory, and fruitful in *Grain*. It was ruined by the Kings of *Morocco*; and is not known at present, but for the Tomb of one of their *Morabuts* whom they esteem a Saint, and where the Country people lay in pledge their *Ploughs* and Instruments of labour, which no persons dare touch. They have another *Morabut* near *Tbagia*, whom they believe to work Miracles, and to preserve them when they are met by *Lions*; a place much frequented by those of *Fez*, as being the Sepulcher of one of their Prophets to which they go in exceeding great numbers in *Pilgrimage*. *Adendum* towards the *Sea*, well walled, and fenced on one side by a *Lake* or *Pool*. *Tegeet* above the *Ommiraby* hath store of *Grains*, where the *Arabs* have a *Toll*, once of great note.

The Ornament of this Province, and of the whole Kingdom (nay we may say of all *Barbary*) is *Fez*, which the *Mahometans* call the Court of the West: It is 100 Thousand paces from the Ocean, and as much from the *Mediterranean*. Its form is a long square, of which the middle is in a Plain, the two ends on Hills; and without several Suburbs, some of 500, some 1000, and others of 2000 Houses. This City bears the name of *Fez*, from the abundance of *Gold* which was found in the digging the Foundation thereof. It hath 12 principal *Quarters* or *Regions*, 62 great places for Trade, and much frequented by *Merchants*, of divers Nations who are allowed a publick meeting place for their *Commerce*, and lodging for their residence, and also *Store-Houses* for their *Commodities*; this place may rather be called a Court, than an Exchange, it being inclosed within a strong Wall, in which are 15 fair *Streets*, for several Nations to meet and reside for the better negotiating of their affairs; to this inclosure there are 12 *Gates* which every night are shut up and kept guarded at the Cities charge for the security of their *Goods* and *Persons*. Its Houses are well built, hath abundance of *Temples*, amongst which about 50 are well built, and beautiful. The greatest and most sumptuous of all, is seated in the heart of the City, containing about a Mile in Circuit, hath 31 great high *Gates*; and round about are several *Porches* containing 40 yards in length, and 30 in breadth, under which are the publick *Store-houses* of the City: The *Tower* is sustained by 35 *Arches* in length, and by 20 in breadth: All the *Temple* hath 900, and almost all these pieces enriched with *Marble*. Its Revenue is 200 *Duckats* a day, others say 400, which are either 75 or 150 thousand *Duckats* yearly. Within and without the City there are above 200 *Hospitals*, of which 25 are for the sick people of the Country, among which one can daily provide for 2000 Persons, others are for strangers; but their Revenues are much squandered, and they give nothing but the Bed and Coverlet, but in some Food for three daies. There is likewise 200 *Banias* or *Stews*, 200 *Inns*, of which some have more than 100 *Chambers*, 400 *Mills* which daily work 1200 *Mules*. Among its *Colleges*, the building of that of King *Habu Henan* cost 500 thousand *Duckats*, being a most curious and delicate Building, all enriched with *Mosaicque* work of *Gold*, *Azure* and *Marble*; its *Gates* are of *Brass*. In this *Colledge* are abundance of stately Buildings, as *Cloisters*, *Halls*, *Baines*, *Hospitals*, &c. It hath a stately *Library*, in which besides other Books are 20000 Volumes in *Manuscript*. They have 150 publick necessary houses built so commodiously, that the Waters carry away the ordure. To its Walls it hath 86 *Gates* which serve for entrance into the City.

The New City of *Fez*.

South East of the old *Fez* is the new City, at a Mile or 1200 paces distance; this is almost only for the House, and for the Officers of the King. The Palace where he ordinarily resides, and the Palaces of the principal Lords, the *Mint*, a stately *Temple*, &c. are in the first quarter. The Officers of the Court, and the Captains of the guard hold almost all the second, and the Kings Guards alone had formerly the third. Now a good part of this last quarter is possessed by *Jews* and *Goldsmiths*; and part of the second, by divers *Merchants* and *Artisans*.

In

In this City of *Fez*, (as generally throughout these parts) they have abundance of *Conjurers*, *Fortune-tellers*, *Juglers*, and *Incanters*, who are in some War esteem amongst them. Its People are of a dusky or blackish complexion, of fly, Stature tall, and well proportioned; they are of an active disposition for and Horse-manship, otherwise excessive idle; they are very subtle, close, perfidious, inconstant, proud, much addicted to Luxury, and therefore by consequence very jealous of their Wives, whom they keep with great severity, and that the more according to their external graces; they are very revengeful if injured, and hard to be reconciled. In their gait they have much of the *Spaniard* in them; in their Apparel they go very sumptuous and rich, but their Food is but very gross.

As to their Religion they are either *Mahometans* or *Heathens*; and are for the most part inclined to *Literature* and *Arts*.

In this City are four sorts of Magistrates: one for the *Canon-Law*, one for the *Civil-Law*, another for *Marriages* and *Divorcements*; and another as an *Advocate*, to whom they make their appeal. In the *Administration of Justice* they are more or less severe, according to the hainousness of the offence.

In their Marriages they observe many Ceremonies; as being agreed, they are accompanied to the Church by their *Parents*, *Relations*, and *Friends*; which Ceremony being ended, they are invited to two Banquets, the one at the *Bridegrooms* cost, and the other at the *Brides Relations*; which being done, the *Bridegroom* causeth the *Bride* to be conducted to his House with *Musick* and *Torches*, being accompanied with their *Friends*; and being entered the House, she is immediately lead to the Chamber door; and delivered by her *Father*, *Brother*, or some of her *Kindred* to his *Mother* (if living) who there waits for her coming, who immediately is redelivered to him; who forthwith conducts her to a private Chamber, where he enjoyeth her; and if she is found to be a Virgin, which will appear by the blood which will proceed, which perceiving they drie up with a Napkin, and carry in their hands to shew the Company, with great joy; and then they make Feasts, and are very merry: But if the contrary, and that no blood is caused, then they judge her Virginity lost; and thereupon the Marriage is frustrated, and with great disgrace she is turned home to her Parents. This with several other Ceremonies are omitted in the Marriage of a Widow.

Here the Women at the death of their Friends assemble themselves together, habit themselves in *Sack-Cloth* and *Albes*, and sing a *Funeral Dirge* to the praise of the Deceased; and at the end of every verse, howl and crie; and this they do for seven daies together; during which time her Friends send in Provisions, and come and comfort her; for their custom is not to have any meat drest in the House of Mourning, during the said time, especially untill the Corps is interred.

1. The City of *Mahmora* fell into the hands of the *Portugals* in 1515, was presently retaken by the King of *Fez*, who defeated 10000 Christians, and gained 60 pieces of *Artillery*. The Kings of *Spain* likewise made themselves Masters of it 1614 and have fortified it because of the goodness of the Port. 2. *Salla* or *Sally*, hath been the residence of some Kings of *Fez*. It is composed of two Cities, the Old and the New; and hath a great Trade with the *Englishs*, *Frenchs*, *Hollanders* and *Genoueses*. Its Fortrefs is on a rising ground, with a high Tower which discovers the Sea. In the Castle the King *Manfor*, and others his successors, have their magnificent Tombs.

The place was taken by the *Castilians*, and retaken from them some years past; and afterwards abundance of the *Moors* of *Granado* driven from *Spain*, retiring thither, have fortified and enriched it with their Piracies. 3. *Mechanese* between *Sally* and *Fez*, is in the middle of a Plain, where for 5 or 6000 paces, there is only *Gardens* filled with excellent Fruits. The City is well built, its *Streets* large and well ordered. Its *Inhabitants* liberal, and civil, but alwaies in jealousy against those of *Fez*. Divers *Aqueducts* bring water to the City, and furnish the *Temples*, *Bains*, *Hospitals* and *Colledges*, and private Houses.

X x 2

Algar

Their Religion.

Their Magistrates and Justice.

Province of
Algar.

Algar is a Province between the Rivers of *Suba*, and *Lufus* or *Lixa*, on the Coast; it extends itself far up the Land, towards the City of *Fez*, and hath fair and fertile Fields, with an Air so pleasant, that, formerly the Kings of *Fez* passed here a part of the Spring in Hunting. 1. *Elgiumba* or *Elgiubma*, in the way from *Fez* to *Larrache*, and formerly the fairest of the Provinces; serves now only as the *Granary*, where the *Arabs* store up their Corn. 2. *Casarel-Cabir*, a place of pleasure which *Munfor* caused to be built between the *Fens*, the *Forests*, the *Sea*, and the *River*, may now have about 1500 Houses, adorned with a stately *Hospital*, a *Colledg*, and many *Temples*. The *Battel* which *Don Sebastian* King of *Portugal* lost, was here fought. In which it is observable, that the three Chiefs of the Armies, which that day met, all died, viz. *Don Sebastian* of *Portugal*, in the field of the *Battel*; *Muley Mahomet* of *Fez*, in favor of whom *Don Sebastian* passed into *Africa*, was drowned passing the *River* of *Mucazin* to save himself in *Arzile*; and *Abdelmelech* of *Morocco*, the Conqueror, died with labour and pains, or with the sickness with which he was seized before the *Battel*; all three competitors for this Kingdom; with several others of eminent quality. 3. *Lharau* or *Larrache*, once *Lixos*; which some among the Ancients say, was greater then the *Great Carthage*, and hath made the Royal Residence of *Antaus*, whom *Hercules* defeated, and from whence he brought the *Golden Apples*, gathered in the *Hesperides Gardens*. It is at present one of the principal Fortresses of the Kingdom, and hath often been attempted by the *Portugals* and *Spaniards*.

Province of
Habat.

The Province of *Habat* is part on the *Ocean*, part on the *Mediterranean Sea*, and holds all the streight of *Gibraltar* on the *African* side, opposite to *Spain* in *Europe*.

The principal Cities of this Province are, *Arzila*, which the *Portugals* took in 1471, carrying away all its inhabitants, and among the rest *Muley Mahomet el Outaz*, then seven years old, after King of *Morocco*, who remembering more his imprisonment, then the liberty he had from *Spain*, in the year 1508 raised 10000 *Moors*, besieged, and took the City of *Arzila*, and the *Castle*, the *Portugals* hardly defending themselves in a *Tower*, which was yet relieved, the *City* and *Castle* retaken, and the *Moors* well beaten. The *Portugals* afterward, and under some pretext, abandoned this place, which *Muley Mahomet* called the *Black*, returned it to *Don Sebastian*, King of *Portugal* in 1578, but which the *Xeriffs* retook again, and do at present possess. The *City* is great and strong, with a *Port* on the *Ocean*; the soil produces more fruits and Pulse, then *Grain* and *Wood*. 2. *Tangier*, of old *Tingis*, hath been the most famous among the Ancients, builded, as they say, by *Antaus*; and so renowned, that the neighbouring *Mauritania* took from it the name of *Mauritania Tingitana* and the *Streight*, of *Fretum Tingitanum*; yet were its *Bishop* and *Government* united not long since to that of *Centa*, where they had their residence, till the dis-union of the *Estates* of *Portugal* and *Castile*; *Centa* remaining in the hands of the *Spaniards*; *Tangier* and *Cazar Ezzaghir* returning to the *Portugals*. The former of the two last is now delivered into the hands of the *English* upon the marriage of *Danna Catharina*, *Infanta* of *Portugal*, with our Sovereign Lord King *Charles* the Second, of happy memory. Where we have a good *Fort* and *Mold*, for the convenience of shipping; by which means, it may be in time a place of a considerable Trade. It is made a very strong place since the *English* have been masters of it, and doth contain about 1500 Houses well built; they have pleasant Gardens. Near to this place it is said, that *Hercules* overcame *Antaus*, a monstrous *Giant* of 64 Cubits high. 3. *Tettuan* or *Tettoguin*, hath not above 800 Houses, which are as well built as any in *Barbary*; and a good part of the *Moors* driven from *Granada*, being retired thither, it is maintained in a good estate; they are continually courting on the *Sea*, and keep many *Christians* their *Slaves*.

In this Country are abundance of other Cities, though of no such considerable note as those aforementioned. Its Mountains which are counted about 8; are inhabited by the Tribes of *Gumea*, who drink *Wine*, though contrary to the Law of *Mahomet*, and pay some 3, some 4, others 6000 *Duckats* yearly. That of

of *Rabon* hath *Vineyards*, and its *Inhabitants* make quantity of *Sope* and *Wax*. *Benifensecare*, besides its *Wax*, yields *Hides* and *Linnen-Cloth*; and on its *Saturday Markets*, the *Christians* may Trade. *Beniburus* is almost dis-inhabited, by reason of the Neighborhood of *Gazar Ezzaghir*, under whose government it hath been. *Chebibon* the contrary, is much augmented, after that the *Portugals* took *Tangier*, the ancient *Inhabitants* of this retiring thither. *Benichefen* hath its *Inhabitants* addicted to *Arms*; as likewise *Quadres* near the *Streight*, and *Bemguerdarfeth* near *Tittuan*, to whose government they are obedient, serving against the *Garrison* of *Centa*. They have formerly furnished the Kings of *Granada* with a great power, and among them with one *Helul*, whom their *Poems* and *Romances* esteem the terror of all *Spain*. *Angera* hath *Flax*, of which they make *Linnen-Cloth*; as also *Timber* fit to build Ships.

Errif above the *Mediterranean Sea*, and between the *Rivers* of *Gomer* and *Nochor*, advances it self in the Land as far as the Mountain which separates it from the Provinces of *Fez* and *Chaus*. It is very Mountainous and Woody; it is little fruitful in *Grain*, abundant in *Barley*, *Vines*, *Figs*, *Olives* and *Almonds*: Hath quantity of *Goats*, *Asses* and *Apes*; few *Sheep* or *Oxen*. The Houses are only of one Floor, and ill covered; the *Inhabitants* are valiant but much addicted to drink. Its Cities are almost all on the Coast, as *Gomer*, *Terga*, *Bedis*, *Mezemma*, and others. The most part ill inhabited by reason of the Neighborhood of the *Spaniards*. 1. *Gomer* is seated on a *River* of the same name, 2. Those of *Terga* use much *Fishing*, uttering their *Salt-Fish* to the *Inhabitants* of the Mountains; but at present almost quite deserted. 3. *Bedis* or *Belis*, with its *Castle*, its *Palace*, and its *Port*, is in some esteem; and maintains some *Gallies*: But much molested by the *Fort* of *Pennon de Velez*, which the *Spaniards* hold in an Island not above 1000 or 1200 paces from *Bedis*. 4. *Mezemma* seated on a Mountain, formerly great and well peopled, hath now nothing but Walls. The Mountains have *Vines*, *Barly*, *Horses*, *Goats*, *Fruits*, &c. Some pay some tribute, and others none at all. That of *Beniguazeval* can arm 25000 men, hath quantity of *Towns*, and a *City* famous among them, and a *Volcano* which continually casts forth fire. *Susaon* is one of the most fruitful and most pleasant places of *Africa*. Its people under their *Xeriff* keeping themselves in liberty.

Garret possesses the rest of the Coast upon the *Mediterranean Sea*, unto the *River Mulva*, which separates it from *Tebansin*. *Mellila* hath been its chief *City*, at present in the hands of the *Castilians*; as is *Chafasa*, and both the one and the other have their *Port*; that of *Mellila* much better, and may count 2000 Houses, serves as a passage to the Traffick between those of *Fez*, and the *Venetians*. There are excellent *Mines* of *Iron* in the neighborhood. The middle of this Province is Mountainous. Its extremity towards the South, joining to the Province of *Chaus*, is untilld, and without Water.

The Province of *Chaus* is so great, that it contains a third part of the Kingdom: The *Rivers* of *Cebu* or *Suba*, of *Mulvia*, of *Nacor*, and some others have here their Springs at the foot of divers Branches of the *Atlas*. This Country is but meanly inhabited, considering its bigness; and its people fierce and warlike, to which they are addicted, not caring much for Traffick or Tilling their Ground; which if well ordered, would produce several good Commodities. Among its Cities, *Tessu* is the chief, and is esteemed the Third of the Kingdom of *Fez*, and makes no less then 5000 Houses. The Nobility have here many rich *Palaces*, but the private Houses are not fair. It is adorned with 3 *Colledges*, 23 *Baniacs*, many *Hospitals*, about 100 *Mosques* or *Temples*, among which there is one greater, though not richer then that of *Fez*. It hath a magnificent *Castle*, and the Kings *Marinus* sometimes made here their residence, and gave it to their second Son; as well because of the beauty of the City, and the civility of its *Inhabitants*; as for the goodness of the Air, and the abundance of all sorts of Fruits, which they gather there. 2. *Turet* is beyond the *River Mulvia*, and on the *River Quhas*; so advanced on the Frontiers, that the King of *Fez* and *Telensin* have often carried it, the one from the other. It is seated on a Hill in the

Province of
Errif.Province of
Garrit.Province of
Chaus.

Hamaia,

Havifgol

City of Oran.

Marfaquibir.

Province of
Anghad.Province of
Bntrafid.

magnificent, its Houses better built, its *Streets* more large and spacious, its *Gardens* more embellished: Its People more civil, and its *Merchants* of better credit than those of *Algier*. It hath a *Cittadel* built after the *Modern Fortifications*. 2. *Humain*, which others call *Humanbar* and *Unbain*, is the ancient *Artifga*. Its Port is not great, but good; its Land hath much *Figs*, *Oranges*, *Citrons*, *Pomgranates* and *Cotton*; of which, the *Inhabitants* make divers *Manufactures*. In 1535 this place was ruined by the *Castilians*, and not restored till long after. 3. *Hurefjol* is the ancient *Siga*, a *Roman Colony*, the residence of *Syphax*, (sometimes King of this Country) before he seized the *Estates of Massanassa*: Its situation is on a *Rock*, whose foot is washed by the *Sea*, and hath no communication with the firm Land, but on the South side. This City hath been much greater then it is; the takings and retakings which it suffered by the Kings of *Tenes*, by the *Califfs*, by the *Moors*, by the *Castilians*, and by the *Arabs* reduced to the estate it is at present under the Kings of *Algier*, who kept a Garrison in its *Castle*. 4. *Oran* and *Marfa-el-Quibir*, which belongs to the *Marquisate of Oran*, are in the hands of the *Catholic King*. *Oran* which the *Africans* call *Tubaran*, the *Arab of Nubia*, *Vaharan*, is the *Cuisa* of the ancients; and *Marfa-el-Quibir*, there *Portus Magnus*, since this name signifies, the great Port. This was taken by the *Marques of Comares*, in the year 1505; the other by the *Cardinal Ximenes*, in the year 1509. At the taking of this last, the *Castilians* lost only 30 men, killed 4000 *Moors*, and delivered 20000 *Christian Captives*. This City of *Oran* before it was taken, had above 6000 Houses, abundance of *Temples*, *Hospitals*, *Canes*, *Bania's*, &c. and had sometimes been the residence of the *Catholic Kings*: The *Venetians*, *Genovese*, *Catalonians*, &c. having here so great a Trade, that its riches and power inclined its *Inhabitants* to deny Tribute to the Kings of *Telenfin*, and to make some incursions on the Coast of *Spain*, which was the cause of their loss. At present it is a *Suffragan Bishoprick* to the *Archbishoprick of Toledo*; it hath some *Convents* and *Hospitals*, among others one very rich. It is strongly seated on the *Mediterranean Shore*, powerfull at Sea in their *Gallies*; and is a place of some Trade; affording most of the Commodities the Country produces. 5. *Mafalquibir* hath one of the fairest, greatest and most secure Ports that is in all *Africa*. The Government or *Marquisate of Oran* comprehends likewise some *Castles* and *Mountains*, where there are good Garrisons, which keep the Neighborhood in jealousy: *Mazagran* with its *Castle* on the Coast, is in the hands of the *Moors*.

The Quarter of *ANGHAD* of *RANGUAD*, though for the most part desert, yet hath some fertile places, where are the Cities *Gagida*, and others. *Gagida* hath yet about 3000 Families; its Land fruitful in *Grains*, and watered with many *Rivers*. The Desert is possessed by the *Arabs*, and amongst them many *Lions*, *Wild-Boars*, *Snags*, and above all *Ostriches*, in hunting of which, the *Arabs* often exercise themselves, making profit of their Feathers, eating their *Flesh*, and carrying their *Skins* to carry their *Baggage* in. They keep the heart to make use of in *Charms* or *Witchcrafts*, the Fat to mix in their *Medicaments*, and the Nails or the Horn to make *Pendants* for the Ears, to deck themselves with; when they utter the other parts.

BENI-RASID or *BENIRAXID*, hath some Plains towards the North, many Mountains toward the South, is fruitful almost every where, and hath three or four places of some consideration in these Mountains. 1. *Beni-Arax* of Old *Bullebora*, is not walled, it contains more then 2000 *Inhabitants*. 2. *Caldin* or *Caldin-Habara*, of Old *Orbara*, between two Mountains, is strong. 3. *Mafcar*, of Old *Victoria*, hath a *Castle* where the Governor of the Country resides. 4. *Butha*, of Old *Vaga*, on the River *Mina*, having been ruined by the *Inhabitants* of the Mountain of *Gumferis*, some *Morabuts* out of their opinion of his sanctity, restored it in Anno 1520. And 5. *Medua*.

The

Province of
Tenes, its chief
places, fertility
and people.The Quarter
of Algier, and
its parts and
placesThe City of
Algier de-
scribed.

The Province of *TENES* is between that of *Telenfin* and *Algier*, to whose Kings it hath been subject sometimes to one, and sometimes to others, and sometimes it self hath born the Title of a Kingdom. Its principal places, on the Sea are, *Tenesa* and *Sargel*; within Land, *Meliana*. 1. *Tenesa*, part of the side of a Hill, and part on a Plain descending to the Sea; hath a *Castle* and a *Palace*, formerly the abode of its Kings or Lords, now of its Governours: Its *Inhabitants* are addicted to Traffick. The Country, both in the Mountains and Plains, yields them *Grains*, *Fruits*, *Hides*, *Wax*, *Hony*, and some other Commodities. 2. *Brischa*: and 3. *Sersela*, East of *Tenesa*, and between *Tenes* and *Algier*, have many *Roman Antiquities*. The first is the ancient *Icosma*; the other is *Rufubricari*. This hath suffered divers Ruins; the *Moors* driven from *Granada* rebuilt it, and enriched it with their Piracies, with their *Silks* and *Fruits*. The *Inhabitants* both of the one and the other, are for the most part *Weavers*. 4. *Meliane*, or *Malliana*, is on a Mountain, where yet the most part of the Houses have their *Fountains* and *Wall-nut Trees*. 5. *Mezume*, is adorned with a *Castle*, a *Palace*, and a fair *Temple*. 6. *Teguidant* hath a large circuit, which had been empty, had not sometime since a *Marabut* re-peopled it. These two places are by some esteemed in the Quarter of *Telenfin*. Among the Mountains *Beni-Abucard*, is near to and of the appurtenances of *Tenes*. *Guanferis* can set forth 2 or 3000 Horse, and 15 or 16000 Foot.

The Quarter of *ALGIER* comprehends likewise that of *Couco*, in the Mountains of *Eguiel-Vandaluz* alias *Couco*, and *Tubusuplus*, which is the principal place, built on the top of a *Rock*, craggy on all sides. It may contain about 1600 Houses: the Kings or Lords of the Country reside here, and have oft disputed their liberty with the Kings of *Algier*. These Mountains are two or three days Journey long, and their approaches very difficult: They yield *Olive*, *Grapes*, and especially *Figs*, of which the King makes his principal Revenue; *Cattle*, *Iron*, *Saltpeter*; and the Plains afford *Corn*, and every where Springs of Running-water. The People are *Bereberes* and *Azuzges*, well armed and courageous. The Metropolis of the Kingdom is *ALGIER*, at present the most famous place of all the Coast of *Barbary*, either for its Riches and Power, or for the extent of its Estates. It is seated on the declension of a Mountain in form of a Triangle, so that from the Sea all its Houses appear one on the top of another, which renders a most pleasant prospect to the Sea. Its circuit is not above 3400 Geometrical paces, fortified with some ill-disposed *Bastions*; but the Island, which was before it, is joyned to the City some years past; where is built a *Pentagone*, the better to secure the Port and Island, and keep it from being fired, as in 1596, 1606, &c. It is a City not so large as strong, and not so strong as famous: Famous for being the receptacle of the *Turkish* Pirates, who so much domineer over the *Mediterranean Sea*, which too often proves to the great damage of all Merchants who frequent those Seas. This City hath at present 12 or 15000 Houses; it had not when *J. Leon of Africa* wrote above 4000. The Streets are but narrow, but the Houses fair and well built, yet one which runs along the Sea is fair and large; they count 100 *Mosques*, whereof 7 are very sumptuous; 5 Houses or Lodgings of *Janizaries*, capable to hold each of them 600 Men; 62 *Bania's*, of which two are very beautiful; 100 Oratories of *Turkish* Hermits, and almost as many publick *Schools*. Out of the City are many Tombs of *Turks*, *Moors*, and *Jews*; the burying place of the *Christians* is without ornament. Among these Tombs is remarkable that of *Cave*, Daughter of *Julian*, Earl of *Bethica*, who having been ravished by *Roderic* King of the *Goths*, was the cause of the *Moors* descent into *Spain*. It hath almost no more Suburbs, the City being encompassed with many Hillocks and rising Grounds, whose sides and Vallies are covered with 12 or 15000 fair Gardens, abounding with store of pleasant Fruits, with their Fountains and other places of delight. Beyond these Hills is the Plain of *Moteja*, 15 or 16 Leagues long, and 8 or 10 broad, very fruitful in *Grains*. This place is famous for the Shipwreck which *Charles* the Fifth here suffered.

Y y

who

Here Charles
the Fifth suf-
fered Ship-
wreck.

who besieging this Town, lost in its Haven at one Tempest (as Heylin noteth,) besides a great number of *Karvels* and small *Boats*, divers strong *Gallies*, 140 *Ships*, a great many Pieces of *Ordnance*, about half his *Men*, and such great quantity of gallant *Horses*, that in *Spain* they had almost like to have lost their race of good and serviceable *Horses*.

The Cities, 1. *Temeudfusta*, about 7 or 8 Leagues from *Algier*, with a good Port: and, 2. *Teddeles*, 18 or 20 are the best places of the Coast: the first answers to the ancient *Jomnum Municipium*, the other to *Ruspis*; likewise *Municipium*. 3. *El Col de Mudejares*, of old, *Tigist*, is newly repeopled by the *Morisque Mudejares* of *Castile* and *Andalusia*; and the *Tugartins*, which were of *Valentia*: It is 8 or 10 Leagues from *Algier*, beyond the River *Selef*, which they here call the River of *Saffran*. 4. *Gezaira*, a City seated on the Sea-shoar. 5. *Menfara*: And 6. *Garbellum*, both Sea Towns.

The Fertility
and People of
Algier.

The Air about *Algier* is pleasant and temperate: The Land hath excellent Fruits, as *Almonds*, *Dates*, *Oils*, *Raisins*, *Figs*, some *Drugs*, &c. The Plain of *Moteilia* is so fertile, that sometimes it yields 100 for one, and bears twice a year good Grains. In the most Desert Mountains are found Mines of *Gold*, *Silver*, *Iron*, quantity of fierce *Beasts*. The Country affords excellent *Barbary Horses*, also *Esfridge Feathers*, *Wax*, *Hony*, *Castile Soap*, &c. Besides they have good quantities of most Commodities, which by reason of their Piracy they take from other Nations, to the great enriching of the place, most of the Inhabitants living by it, setting out Vessels in Partnership and sharing the Gains, selling the Commodities and the Men they take as Slaves in open Markets. The Natives of *Algier* are fairer, and not so brown as the *Moors*; but the City is filled with all sorts of Nations. The *Fanizaries* make the greatest part of the *Militia*: The *Turks* have the chief Trade, who are found to transport several Commodities to other Countries; but there are many of the *Moors* driven from *Spain*, and others who have retired themselves from the Mountains; many *Arabs*, *Jewish*, and *Christian Slaves*. The number of the Inhabitants of this City cannot be esteemed by the 12 or 15000 Houses it contains; for there are some Houses where are found 100, 200, or 300 Persons; the *Christian Slaves* only amount to about 30 or 40000 within and about the City; and there are no less than 6000 Families of *Renegadoes*. But the Right Honourable the Earl of *Sandwich*, late General of the *English Fleet*, by order from King *Charles* the Second, put out to Sea with a Fleet of Ships, scoured those Seas, forced them to deliver up all the Slaves, who were Subjects in any of the Kings Dominions, as well as *Englishmen*, and brought them to very honourable terms: By which they are not to seize or stop any *English Ship*, but give them free liberty of Trading where they please; and the like Peace is made with *Tunis*, and other of the *Turks* Territories: But these perfidious People soon violated it.

Province of
Bugia, its chief
places and fer-
tility.

The Province of *BUGIA* is between the Rivers *Major* and *Sefegmar*. This on the East, that on the West. On the Coast are two principal places, *Bugia* and *Ghegel*; in the Land are *Steffa*, *Labez*, *Necaus*, and *Messila*, in some consideration. 1. *Bugia* is a great City, its circuit capable of 20000 Houses, but hath not above 8000; but that which is uninhabited is Mountainous and inconvenient: It was built by the *Romans* on the side of a lofty Mountain, which regards the Sea; now the chief City of this Province. Its Streets and Houses are in good order; it is adorned with many sumptuous *Mosques*, some *Monasteries* and *Colledges* for Students in the Law of *Mahomet*, and many fair *Hospitals* for the relief of the Poor: Its Castle is good and strong, seated on the River *Guad al Qubir*, that is, *Great River*. 2. *Ghegel*, formerly famous, is now only a Borough of 300 ill-built Houses. Its Castle is very good; its Land hath little Corn, store of *Hemp*, *Figs* and *Nuts*. They hold this place to have been the beginning of the fortune of *Barbarossa*. 3. *Labez* makes a separate Estate above *Bugia* and consists only in Mountains of so difficult access, that the Kings of *Algier* and the *Turks* can scarce force them to pay Tribute. The chief Fortress of these Mountains, and the residence of their King or *Xequ*, is *Calaa*. The others are: 4. *Coco de Teleth*; 5. *Tezli*, at the foot of the Mountain. These

These Mountains have little Corn or Fruit; they can raise 5000 Horses, 5000 Harquebusers, and 20000 Men, armed after their mode; all valiant, and better defenders of their liberty than those of *Coucou*. 6. *Necaus*. 7. *Messila*, are beyond the *Abez*, but near the same River. *Necaus* is the most pleasant place of all *Barbary*: It hath something of particular in its publick Buildings, every House hath its Garden so embellished with *Flowers*, *Vines*, *Fruits*, and *Fountains*, that it seems a Terrestrial Paradise. 8. *Chollum*. 9. *Gengetum*, &c.

The Province of *CONSTANTINA* hath sometime had its Kings. This is the New *Numidia*, of the Ancients the most Occidental part of the True *Africa*, and which touches on *Mauritania* to the West, the River *Sefegmar* making the separation. This Province comprehends three quarters, of which that of *Constantina* extends to the Sea, and a good way in the Land; that of *Bona* likewise on the Sea, but little on land; that of *Tebessa* is farther in the Land, touching on *Biledulgerid*. 1. *Tebessa*, formerly *Tebesse*, surpasses (as they say) all other Cities of *Barbary* in three things: In the force of its Walls, beauty of its Fountains, and great number of its *Walnut Trees*. In counter-change its Inhabitants are brutish, its Houses ill built, and its Air unwholesome. 2. *Bona*, of old *Hippo Regnis*; ill inhabited at present, part of its Inhabitants being retired into the Mountains; hath been famous to Antiquity for its greatness, but much more for its Bishop *St. Augustine*, so famed among the Doctors of the Church. It hath suffered great changes under the *Romans*, *Vandals*, *Moors*, and afterwards under *Barbarossa*. 3. *Tabarca*, a City and Isle of this Government, likewise the Hills, and Mountains of *Bona*, where are gathered much Fruits of *Jujubes*, *Grains*, and store of *Cattle*; and the Coast hath red, white, and black *Corral*, which the *French* near to *Bona*, and the *Genovese* near to *Tabarca*, go to fish for. The Family of the *Lomolins* in *Genova*, having a Fortress in the Isle of *Tabarca*, the *French* a Ballion between *Tabarca* and the Point of *Mascara*; the one and the other for the security of their Fishing and Commerce. 4. *Constantina*, which the *Moors* called *Cusuntina*, the Ancients *Cirta Julia*, is a great City, not having less than 8000 Houses. Its situation on a Mountain, which hath but two *Advenues*, the rest being Precipice, makes it strong. The River *Sefegmar* washes the foot of the Mountain; its Castle stands to the North, *Collo* and *Susacada* (on the Coast) are under the Government of *Constantina*, likewise the Mountains which extend themselves to the *Mediterranean Sea*, and to the confines of *Bona*. The Country about *Constantina* is fertile, its Mountains tilled. *Collo* hath its Inhabitants more civil than those of *Constantina*, those having no trade but with those of *Biledulgerid*, the others with those of *Europe*. The Inhabitants of the Mountains can raise about 40000 Men, and maintain themselves almost in liberty, both against the Kings of *Algier* and the *Arabs*. 5. *Cirta*, in the *Roman History*, was the residence of many Kings of *Numidia*; among others of *Massinissa*, afterward of *Syphax*, who drove *Massinissa* from his Estates, and settled himself at *Cirta* with his Wife *Sophonuba*, who had been promised to *Massinissa*. This Woman a little after having persuaded *Syphax* to favour *Carthage*, of which she was against the *Romans*; drew their Arms into his Estate, where *Scipio* defeated and took *Syphax* Prisoner, *Massinissa* besieged, and took *Cirta* where *Sophonuba* was; who had so many attractions, and so much cunning, that in the same day she beheld her self Captive and Wife to *Massinissa*: But she killed her self soon after, that she might not fall into the *Romans* hands, and be led in Triumph through *Rome*. 6. *Stora*: and, 7. *Mabra*, both Maritim Towns.

Province of
Constantina, its
parts and chief
places.

The City of
Tebessa.

The City of
Bona.

The City of
Constantina.

The City of
Cirta.

The Kingdom of TUNIS.

The Kingdom of Tunis, and its division into Governments.

THE Kingdom of TUNIS, besides its particular Province, hath sometimes extended it self over *Constantina* and *Bugia* on one side, and over *Tripoli* and *Exzab* on the other. At present it hath only its own Province, and something in *Billedulgerid*.

This Kingdom of Tunis is divided into 4 Maritim Governments, and 3 or 4 Inland ones. The Maritim are; *Biseria*, *Goletta*, *Soufa*, and *Africa*; *Begge*, *Urbs*, *Cayroan*; and part of *Billedulgerid*, are the third or fourth within Land. Altogether extend themselves from the River *Guad il Barbar*, unto that of *Capes*: this separating them from the Kingdom of *Tripoli*, the other from the Province of *Constantina*.

The chief Rivers of Tunis.

The River *Guad il Barbar*, or *Hued il Barbar*, takes its source near *Urbs*, which it waters with a Channell made on purpose, and discharges it self into the Sea near *Tabarca*. In its course it makes so many turnings and windings, that it must be passed 25 times in the Road between *Bona* and *Tunis*, and that with much difficulty and danger, there being no Bridges, and scarce any Boats to Ferry over. The River *Capes*, of old *Triton*, descends from *Billedulgerid*, and waters at first a very Sandy Country, leaves *Capes* on the Right, and on the Coast of *Tripoli*, and disburthens it self into the Little *Syrtes*, now the Gulph of *Capes*. *Magrada*, another River, hath its Spring likewise in *Billedulgerid* on the Confines of *Zeb*, which it waters in part, washes *Tebessa* of the Province of *Constantina*, cuts the Kingdom of *Tunis* into two almost equal parts, and disburthens it self in the Sea near *Garilmesse*, between *Tunis* and *Hammanet*. Its increases are sometimes extraordinary, and all of a sudden, so that Travellers are often forced to wait some days for a passage.

The Government or City of Biseria.

BENSERTA, of old *Utica*, is a City but of an indifferent greatness, but strong, and peopled with about 6000 Families. It looks Eastward on a Gulph so called, which is about 16000 Paces long, and 8000 broad. Here is a fair Bourse or Exchange for Merchants; two great Prisons for their Slaves, and some Bastions to defend the Port, which is good and large. This place is famous for the death of *Cato*, surnamed *Uticensis*, who for fear of falling into the hands of *Cesar*, here slew himself; and is of note in the *Carthaginian Wars*.

The Government or City of Goletta.

The Government of *GOLETTA* is much esteemed, because of the neighbouring *Carthage*; or rather, because of *Tunis*, whose Key it is. It is a Fortress built in the neck of the Gulph between *Tunis* and the Sea, by which all must necessarily pass: And it hath given occasion to build a Fort on the top of a Hill, whose foot is washed by the Sea. There was heretofore the old Fort, and the new; the Old was only an intrenched Bastion, guarded by 30 or 40 *Jantzaries*; the New is great, well fortified and furnished with all things necessary. A Fountain of Running-water crosses the place, so that it seems rather a City than a Fortress. *Charles* the Fifth took this Fort in 1535, which the *Turks* retook in 1574. Under this Fort was it, that General *Blake* with the *English Fleet*, fired the Pirate Ships of *Tunis* in 1654. *Tunis*, at the bottom of this Gulph, is at present one of the fairest Cities of *Barbary*; it counts 8 Gates, 8 chief Streets, which are crossed by abundance of others, 18 Places or Markets, more than 300 Temples and Synagogues of the *Jews*, and many Oratories, some likewise for the *Christians*; 150 *Bania's* or Hot-Houses; 86 Schools; 9 Colleges, where Youth is nourished and instructed at the publick expence; 64 Hospitals, and a great number of *Canes* or Inns for Merchants and *Christians*, &c. The Buildings of the Royal Palace are magnificent; it had long since 10000 Houses, and is much increased since the *Moors* of *Granada* were driven out of *Spain*. Among its Inhabitants are many Merchants, Apothecaries, Druggists, Confectioners, Cooks, Bakers, Butchers, and above all, *Drapers* and *Weavers*, &c. Their common Bread is kneaded with Oil, of which

The City of Tunis.

which they have abundance, and utter quantity into *Egypt*. Their Linnen and Manufactures have vent through all *Africa*: It is a place of great Traffick, and much frequented by Merchants of Foreign parts, affording several other good Commodities, as *Gold*, *Saffron*, *Wax*, *Oil*, raw and salted *Hides*, variety of *Fruits*, *Wool*, *Spunges*, *Hard Soap*; they have also a great trade for *Horses* and *Ostrich Feathers*, &c. and above all for *Christian Slaves*. Commodities most vendible here are, *English Cloths*, *Perpetuanoes*, *Iron*, *Lead*, &c. They have no Water either of Well or of Fountain, (except that which is reserved for the *Bassa*;) but make use of Cisterns and Rain-water: They are fain to have their Mills turned by their Slaves, or by Oxen. The *Arab* of *Nubia*, *Sannus*, and some others, esteem *Tunis* to answer to the Ancient *Tarbis*: This place (as *Heylin* noteth) is observable in the History of the *Holy Wars*, for the Sieges and Successes of two of our *English Princes*, viz. *Edward* the First, in his Fathers life time, and *Henry* the Fourth, then but Earl of *Darby*: by both of which the City was forced to a composition. But the Ruins of *Carthage*, from which *Tunis* had its increase are remarkable, because of the Antiquity, Situation, Greatness, and Power of this City. The beginning of it is given to *Dido*, the *Phenician*, who inclosed with the Wall the Quarter or Cattle of *Byrsa*, which is two miles and a half in Circuit, which in the Country they still call *Bersac*, and *Byrsa* signifying a Hide to the *Greeks*, and a Fortress to the *Phenicians*; the one agrees with the Fable that *Dido* had bought, and builded the place on the greatness and extent of an Oxes Hide; the other, to the situation and advantage of the place where this Fortress was built. This Situation, and the goodness of the neighbouring Port, drew so many People, that it became one of the fairest Cities in the World. Its circumference in its splendor was 360 *Stadia*, like to that of *Babylon*, and its Inhabitants have been so rich and powerful, that they disputed with the *Romans* for the Empire of the World; being once called the Lady and Mistress of *Africa*. The particular power of this City was not known till the third and last *Punic War*; when after having had to do with *Massinissa*, to whom they yielded a good part of their Estates, after having granted and put into the *Romans* hands their Ships of War, their Elephants, their Arms, and their Hostages, which were demanded: when they commanded them to leave the City, and to inhabit from the Sea-Coast, despair made them resolve on the War. They made other Arms, built new Ships, the Women and Virgins giving their Hair to make Cables and Cordage, and defended themselves yet 3 or 4 years: It was afterwards restored, and at divers times; but the *Vandals*; and in the end the *Arabs*, have wholly ruined it, there not remaining above 7 or 800 Houses of *Fishermen*, *Cardiners*, &c.

Its Trade and Commodities.

Tunis received its splendor from the ruins of Carthage.

The Government of *SOUSA* contains the Cities of 1. *Hammanetba*, which communicates its name to the neighbouring Gulph, at the bottom whereof it is situated; its Walls are strong, and its Harbour safe. 2. *Sufa* is in a higher and lower City; the former on a Rock, and of difficult access; the last on the Sea, with a good Port, where are loaded great quantities of *Oils*, both the one and the other well built. The Duke of *Savoy* made an enterprize on them in 1676. 3. *Monastere*, so called, because there was once a famous Monastery of the Order of *S. Augustine*. The Riches about *Sufa* is in *Olives*, *Pears*, and other Fruits and Pastures for Cattle. The ordinary Food for the Inhabitants is *Barley bread*, the Country affording no other Grain. The Inhabitants of *Sufa* and *Hammanetba* add themselves to Traffick, others to Whitting of *Slaves*; they make *Charcoal*, and draw some profit from their Fishing.

The Government of Soufa, its Cities and People.

The Government of *AFRICA*, or *EL-MADIA*, hath nothing considerable; but this place may be made far better than it is. Its situation is in a Peninsula, which touches not the Main but by an *Isthmus* of 2 or 300 Paces, where there is likewise some Marsh; and on this side the City is invested with a double Wall and good Ditches. Its Port within the City is capable to lodge 50 Gallies; but its entrance is so narrow, that a *Galley* is forced to lift up its Oars to pass.

The Government of Africa, or El-Madia.

The

The Coasts about *Susa* and *Elmedia*, and what Transactions hapned there.

The Coasts about *Susa* and *Elmedia* have been well known in the *Roman History*, in the time of the Wars between *Cæsar* and the Party of *Pompey*. *Cæsar* landed at *Rhuspin*, now *Susa*, *Adrumetum*, now *Hammamet*, being in the Enemies hands; and in the beginning had divers little favourable encounters thereabout. In the end he happily defeated both *Scipio* and *Juba*, near to *Thippus*, now *Elmedia*; and after that defeat, *Cato* despairing slew himself at *Utica*, now *Benferta*: *Scipio* saved himself in some Ships; but being met by *Cæsar's* Fleet, passing his Sword through his Body, he precipitated himself into the Sea. *Juba* would have retired to *Zama*, where he had left his Wives, Children, and Treasures; but *Zama* having refused to open him the Gates, He and *Petereus* retired into a House in the Fields, where they killed themselves. During this War, and almost upon the landing of *Cæsar*, hapned near *Hammamet* a thing incredible, which was, that 30 *Gaul-Horsemen* assaulted a Post of 2000 *Moorish Horse*, put them to rout, and pursued them into the City.

For *Zama*, or *Zama Regia*, it is far distant from the position which *Ptolemy* gives it, and from that of *Ortelius*, which we at other times, and which all others have since followed. This Author places it 500000 Paces from *Carthage*, and 600000 from *Adrumetum*; but it appears both by the *Roman History*, and by the *Itinerary Table*, not to be distant from *Carthage* above 100, or 120000 Paces, and from *Adrumetum* 100000 Paces, or little more.

BEGGE or *Beija*, and *CRBS*; this in the Road from *Tebessa* to *Tunis*, that in the way from *Constantina* to *Tunis*; are both seated in fair Plains, so fertile in Grains, particularly *Begge*; that those of *Tunis* say, that if they had two *Begges*, they would yield as many *Corn*s as there is *Sand* in the Sea; and nigh to *Orbs* is *Camud*, *Arbes*, *Musti*, and *Marmagen*; all fair Cities.

CATROAN, of old, *Theidrus*, ought as it seems to be among the Maritim Governments, since it holds on the Coast *Tobulha*, *Asfachusa*, and some other places; but its principal place being on the main Land, its Government is likewise esteemed to be within the Land. This City is seated in a Sandy plain, which affords neither Grain, Fruit, nor scarce any Water but what is preserved in Cisterns; it is about 100 miles from *Tunis*, and about 36 from any part of the Sea. It was first built by *Huchba*, who was the first that conquered *Africa* for the *Saracens*; who adorned it with a stately *Mosque*, supported on Pillars of *Marble*, of which two or three are very fair ones, and of a prodigious greatness, who also placed in it a Colledge of *Priests*, and now in much esteem, being the residence of a *High Priest* of the Law of *Mahomet*: and to this place (from all parts of the Country) the Corps of their chief Men are brought to be interred; who believe, that by the Prayers of those *Priests*, they shall find a shorter way to Heaven, than if interred at any other place. Its Inhabitants are now reduced to about 4 or 500 Families. Not far from *Cayroan*, are the Mountains of *Zaghoan* and *Guellet*, the last not above 12000 Paces distant; both the one and the other have divers foot-steps of *Roman Buildings*. But I believe it was from the last that *Scipio* considered the Battel between *Massinissa* King of *Numidia*, and *Aldrubal* chief of the *Carthaginians*; and of this encounter *Scipio* would sometimes say to his Friends, That he was the third who had had the pleasure to see a famous Battel, without having run any risque; to wit, *Jupiter* from the top of Mount *Ida*, and *Neptune* from some eminence in the Isle of *Samothrace*, who beheld the Battels between the *Trojans* and *Greeks*; and himself this between *Massinissa* and the *Carthaginians*. The other Cities of this Kingdom of *Tunis*, and towards *Biledulgerid*, are *Cassa*, *Hama*, *Tebios*, *Neifa*, and *Nafia*.

The Governments or Cities of *BEGGE* and *urbs*.

The Government or City of *Cayroan*.

Mountains of *Zaghoan* and *Guellet*.

Mountains of *Zaghoan* and *Guellet*.

The Kingdom of TRIPOLI.

THE Kingdom of *TRIPOLI* takes up the just moiety of the Coast of *Barbary* from *Capes* unto *Egypt*, and divides it self into two principal parts or Provinces, which bear likewise the Title of Kingdoms, to wit, *Tripoli* and *Barca*. *Tripoli* is between the two *Syrtes*, now the Sands or Banks of *Barbary*. These are Gulphs of different greatness, but of the same nature; infamous for the Shipwreck of Vessels lost on their Flats or Rocks; among which the depth of the Water is very unequal, and changes often, there being sometimes much, sometimes a little, and sometimes none at all. The Little *Syrtes*, now the Gulph of *Capes*, separates *Tripoli* from *Tunis*: The Great *Syrtes*, now the Gulph of *Sydra*, divides it from *Barca*; this towards the East, the other towards the West, and on the South it is bounded with *Billedulgerid*, and on the North with the *Mediterranean Sea*. Its principal Cities are *El-Hamma*, *Capes*, *Zoara*, the two *Tripolies*, Old and New, *Sarmana*, *Lepeda*, &c. 1. *El-Hamma* is in the Land, *Capes* and the rest on the Sea; between *El-Hamma* and *Capes* is a Lake excellent against Leprosie, 2. *Capes* of Old *Tacapa* hath good Walls, and a good Castle; but its Port dangerous, and incapable to receive either many or great Vessels; it is situate at the fall of the River *Triton* into the Lesser *Syrtes*. 3. *Zoara*, of old *Pisida*, between *Capes* and *Tripoli*, hath its Land so dry, that the Inhabitants are forced to water it, and yet will scarce produce any thing save *Barley* and some *Fruits*; among which, *Lotos*, with which they make an excellent *Metbeglin*, but it lasts good not above 9 or 10 days, *Flesh* is here very scarce, they not having wherewith to feed Beasts. The *Arabs* frequent their *Markets*, and serve them with *Wools*, wherewith they make *Cloaths* and other Manufactures. 4. *Tripoli* the Old, of old *Sabrata*, and which the *Arab* of *Nubia* calls the *Tower of Sabrat*, hath only some Hamlets, and Remnants of fair and stately Edifices. 5. The New *Tripoli*, of Old *Oea*, is better maintained, though it hath many Ruins, by reason of the divers changes it hath had. The disposition of its places, Streets, and the order of its Buildings is agreeable, being adorned with many fair *Mosques*, *Colledges*, *Hospitals*, &c. The Inhabitants subsist only on their Commerce, which is of what they got from their *Palm-Trees*, *Lotos*, and *Linnen-Cloth*; which they uttered in *Africa*, *Sicily*, and *Malta*; besides their black and *Ethiopian Slaves*, which they sold; till of late they have much enriched themselves by Piracy, it being the usual retreat for Pirates, who infest these Seas, and do much mischief to *Christian Merchants* on the Coasts of *Italy*, *Sicily*, and elsewhere. 6. *Lepeda* is in some repute, as it was in the time of the *Arab* of *Nubia*, and more under the *Romans*: Farther is the Great *Syrtes*, at the bottom of which is the Isle *Sydra*, which communicates its name to the Gulph; and on the Firm Land are the Tombs of *Philenos* or *Aræ Philenarum*, which set the Limits between *Africa* and *Libya*; and afterwards between the Estates of the *Carthaginians* and the *Cyrenians*; and in fine, of the Eastern Empire against that of the West: And, 7. *Sebecum*, a City near the Sea-shoar, nigh to which are three small Isles. Along the Coast are some Isles, among which that of *Gerbes* is well known; formerly it was joyned to the Firm Land by a Bridge. It had two Cities; now hath nothing but one Castle worth notice, and many Hamlets which gather little *Corn*, but much *Fruits*; among the rest *Lotos*, so sweet and pleasant, that the Companions of *Ulysses* having tasted them, sought no longer to go into their Country. This Isle hath about 18000 Paces circuit, yields one of the greatest Revenues to the King or *Balla* of *Tripoli*, by reason of the confluence of Merchants, who fetch thence *Cloth* and divers *Stuffs*, and carry them to *Alexandria* in *Egypt*, &c. one of the principal parts of the Revenue of the same *Bassa*, is the *Saffron* of the Mountain of *Garian*, which is on the South of *Tripoli*: And this *Saffron* is found the fairest, and the best of all others.

Kingdom of *Tripoli*.

Its chief places and people.

Tripoli, and the Trade thereof.

The Isle of *Gerbes* deserted.

B. A. R. C. A.

Barca, on the
Coasts of Bar-
bary described.

THE rest of the Coast of *Barbary*, is now known under the name of *BARCA*; it is bounded on the East with *Egypt*, on the South with the Defart of *Nubia*, on the West with *Tripoli*, and on the North with the *Mediterranean Sea*, which is also some of its Western bounds. The Ancients called it particularly *Libya*, comprehending that which is farther in the Land, and which we call the Defart of *Barca*, and divided this *Libya* into the *Cyrenaick*, the *Marmarick*, and *Libya* Exterior. This last being the nearest to *Egypt*; the *Cyrenaick* to *Tripoli*; and the *Marmarick* resting for the middle. Likewise the most Northern and Maritim part of the *Cyrenaick*, hath passed under the name of *Pentapolis*, because it had five fair Cities; to wit, 1. *Bernichum*. 2. *Torochara*. 3. *Ptolemais*, now *Ptolometa*; and 4. *Boni-Andreas*; and these four are on the Sea; the fifth, *Cayroan*, within Land. This, by much the most famous, was a Colony of the *Lacedemonians*, and hath yielded Learned Men: Its situation is on an eminence that discovers the Sea; and its Campaign, as of those other Cities, is moistened by divers Waters; and their Soil so fruitful, that some have esteemed the *Hesperian Gardens* with their *Golden Apples* about *Berenice*. Its other chief Towns and Cities are, 1. *Barca*, an Inland City of some account. 2. *Melela*. 3. *Careora*. 4. *Camera*. 5. *Zunara*. 6. *Avium*; and 7. *Saline*. All Maritim Towns and Cities, and of some account.

Battus gave the first beginning to *Cyrene*, and he and his Successors reigned near 200 years; after which the City was sometimes in Liberty, and sometimes under Tyrannism: Among which *Nicocrates* having put to death *Phedimus*, Husband of *Aretaphila*, to espouse her; she endured him sometime her Husband, and that until she had occasion to gain the Brother of *Nicocrates*, named *Leander*; to whom she gave her Daughter in marriage, and by his means rid her self of *Nicocrates*, and soon after (by the means of her Daughter) of *Leander* also, and so set the City at liberty; which endured till the time of *Alexander* the Great, when the Country fell to the *Ptolomies*, Kings of *Egypt*; afterwards, to the *Romans*, to the *Soldans* of *Egypt*, and to the *Turks*; having almost always followed the Fortune of *Egypt*. But at present *Barca*, not far from *Cayroan*, is the most famous of this Quarter, and hath given its name to the Kingdom. The *Arab* of *Nubia* makes much account of it in his time, and lays out divers ways, and gives the distances from this place to others farther in the Defart. Moreover this quarter of five Cities is called by some *Mesrata*, and its Inhabitants esteemed rich. They trade both with the *Europeans*, *Negroes* and *Abissines*, fetch from them *Gold*, *Ivory*, *Civet*, *Musk*, and *Slaves*, which they transport into *Europe*, besides their Native Commodities; and bringing from *Europe*, *Corn*, *Linnen*, *Woolen Cloth*, &c. which they carry to the *Negroes*, *Abissines*, and elsewhere. Its other chief places in the Kingdom of *Barca* are, 1. *Doera*. 2. *Forcella*. 3. *Salina*. 4. *Luchun*. 5. *Solana*. 6. *Musolomarus*. 7. *Cartum*. 8. *Albertonus*. 9. *Roxa*. 10. *Raibba*; and, 11. *Ripealba*. All Maritim Towns and Cities, and most of which having good and commodious *Roads*, *Ports*, and *Havens*, and well frequented and inhabited.

Between *Cayroan* and *Alexandria*, there is on the Coast the Port of *Alberton Paratonium*, which is considerable both for its goodness and greatness: And sometimes the Ancients have called it *Ammonia*, because from hence was a way to the Temple of *Jupiter Hammon*. This Temple hath been very famous among the *Pagans*. *Bacchus* returning from *Asia*, which he had overcome, caused it to be built in honour of his Father, who under the shape of a *Ram* had shewed him, as he passed with his Army, where to find Water in those Defarts; and he first consulted the Oracle, and put it in such

repute

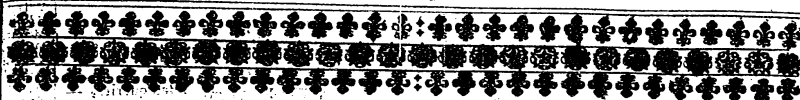
repute, that divers other *Heroes* afterwards consulted it. *Perseus*, when he was sent to fetch the Head of *Medusa*, the *Gorgon*; *Hercules* going from *Mauritania*, where he had overcome *Anteus*, towards *Egypt*, where he was to defeat *Bustis*. *Alexander* the Great, to make it believed he was likewise the Son of *Jupiter*, and that the Empire of the World was destined to him. But *Cambyses*, the Son of *Cyrus*, having a design to pillage this Temple, beheld his Army perish in these Defarts, and was saved himself only to see his own madness, and to die unhappily by his own Weapon. About this Temple there are some Springs of Running Water, and some Trees, which makes this quarter pleasant. Among these Waters, that which they called the *Fountain of the Sun*, had this particular quality, that it was very hot at Midnight, and very cold at Noon-day; the cold increasing from Morning till Noon, and diminishing until Evening; and from thence the heat increasing till Midnight, and diminishing until the Morning. There were three several ways which they used ordinarily to go to this Oracle: the shortest was by *Alberton*, which (as we have said) was upon the Coast, and from whence it was but 1300 *Stadia*, which are about 162000 Paces. Another way was from *Cayroan*, from whence it was 3000 *Stadia*, or 375000 Paces. *Pliny* saith, 400000; the difference is 25000 Paces. The longest way was from *Memphus*, from whence it was 3600 *Stadia*, or 450000 Paces. These are 180 Leagues for this last, 150, or little more, for the second, and 65 for the first. All these ways are very difficult, the Country being only Defarts of *Sands*; so dry, that the Wind moves them like the dust of the High-way, and that in so great a quantity, that they are able to interr *Carravans*. And if there be any Habitations in these Defarts, and where there is any Springs of Water, they are distant one from the other 40, 50, 60, sometimes a 100 Leagues; and these Habitations have little or nothing, since that of *Hammon*, the most considerable, is not above 80 *Stadia*, or 4 Leagues circuit; and yet it had a King, a Great Priest, &c.

In the Defart of *BARCA* there are some Parts peopled and frequented amongst those vast and floating *Sands*; as, 1. *Angela*, where there are three Cities, and many Villages; and their People have a great power against the *Serpents*, and therefore may answer to the Ancient *Billi*. (if the South-wind have not buried these in the *Sand*, for resolving to make upon him, because he had dried up all their Waters.) 2. *Seria*, which hath been once a great City, but at present reduced to Ruins. 3. *Alquechet*, which hath three Cities, and some Villages; and possibly *Eleochat* or *Eleocath*, is the same; or if they be two, they answer to the ancient *Oasis Magna*, and *Oasis Parva*. Its other chief places are, *Sabia*, *Ernet*, *Couzza*, *Ascor*, *Angela*, *Ebaida*, *Gorham*, and *Ammon*, spoken of before. Among these Defarts are many *Arabs*, of which some are powerful in Horse and Foot, and will not suffer any Cities, except of some *Africans*, which pay them Tribute.

At present the People of these Defarts are in part *Africans* or *Bereberes*, part *Arabs*, and all extremely barbarous. And since we are fallen on these People, and that we have here the occasion, let us say, That *Barbary*, *Billedulgerid*, and likewise *Znaxa*, and part of *Nubia*, are for the most part inhabited by these two sorts of People. The *Africans* and *Bereberes* are, the Natural Inhabitants of the Country, or at least have been long seated there. They are divided into five principal Races, to wit, of *Zanbagia*, *Musmuda*, *Zeneta*, *Haora*, and *Gumeria*: And these five Races are subdivided into more than six hundred Branches or numerous Lines, which distinguish themselves very well the one from the other, being very curious to keep the Antiquity of their Race, and to know from what People they are descended.

The Defart of
Barca, with its
chief Places
and People
described.

The People of
Barbary.



BILLEDULGERID.

Billedulgerid,
its Bounds
and Parts.

its People.

The Kingdom
of *Sus*, and its
parts.

its chief places,
and its
fertility.

BILLEDULGERID is very improperly called *Numidia* by the Modern Authors: *Numidia* having been upon the *Mediterranean Sea*, which *Billedulgerid* touches not at all. Its confines are on the North of *Barbary*, from whence it is separated by Mount *Atlas*, on the South *Zaara*, on the West the great *Ocean Sea*, and on the East *Egypt*. Its principal Parts, Kingdoms or Provinces, are, *Sus* or *Tesset*, *Darba*, *Segelomessa*, *Tegorarin*, *Zeb*, *Billedulgerid*, and the Desert of *Barca*, which stretch themselves from the *Ocean* unto *Egypt*. And this length is of 1000 or 1200 Leagues, its breadth being for the most part not above 100, or little more, from which they have what is needful for them. The Air is healthful, they live long, are deformed, are held base People, ignorant of all things, are addicted to Theft, murder, are very deceitful, they feed grossly, and are great Hunters. They acknowledge *Mahomet* for their Prophet, whose Principles of Religion they observe, though they differ in many Ceremonies; their Garments are but mean, and so short, that not above half their body is covered with them; the better sort are distinguished by a Jacket of *blew Cotton*, which is made with wide Sleeves. They make use of *Camels*, as we do of *Horses*. Among them are many *Arabs*, which live by *Advares*, that is, *Communalities*, each of 100, 150, or 200 *Tents*, which they transport whither they please, that is, where they find best feeding for their Cattle; and when they stop, they dispose their *Tents* in a circle, making therein divers Streets and common places; and leaving some inlets and outlets, which are shut up and guarded like a City. These *Arabs* esteem themselves the most noble of all, calling those which till the Earth and prune Vineyards, Servants; and those which abide in Cities, Courtiers, and Effeminate: And these *Arabs* are esteemed more civil and ingenious than the *Numidians* are.

SUS, which *Sanutus* passes under the name of *TESSET*, and which is called the farthest *Sus*, to distinguish it from that of the Kingdom of *Morocco*, is the most Western part of *Billedulgerid*: It may be divided into seven Quarters, of which *Idausquerit*, *Extuca*, and *Nun*, are on the Sea; *Tesset*, *Guadenum*, *Isfrena* or *Ufaran*, and *Archa* within the Land. Each of these parts have many Cities, Castles, and Villages; and the most part of its People are *Bereberes*, *Africans*, or *Arabs*. 1. *Idausquerit* is the best Quarter, and the most fruitful, yields Fruits sweet and sown, as *Oranges*, *Citrons*, &c. Also *Wheat*, *Barley*, &c. Feeds much Cattle, among others multitudes of *Horses*; can raise 5000 *Horse*, and 30000 *Foot*: They are held the best Souldiers in all *Billedulgerid*, and almost of all *Africa*. 2. *Extuca* is proper only for Pastures, abounds in *Goats*. 3. *Nun* hath but little *Barley*, and few *Dates*. 4. *Tesset* is a Town of about 400 Houses, hath some trade with the *Negroes*. The Inhabitants of *Guadenum* live of *Goat's Milk*, by Hunting, and of *Dates*; and the Country hath *Ostriches*. Those of *Isfrena* trade with the *Portugals* at *Guarguesen*, and those of *Archa* hath only *Dates*. And in these seven Quarters there are several other Towns and Cities, as *Buzedora*, *Utemila*, *Albene*, *Afulima*, *Bulesa*, and *Suana*, all Maritim places, opposite, and not far from the *Canary Isles*.

DARHA,

BILLEDULGERID.

The Kingdom
of *Darba*, and
its chief places.

The Kingdom
of *Taffilet*, with
its chief places.

The Kingdom
of *Segelomessa*
described.

Several small
Estates in and
about *Segelomessa*.

DARHA is on the East of *Tesset* and *Morocco*: It is divided commonly into three parts, of which the chief retains the name of *Dara*; the other are, *Taffilet* and *Itata*, which pass likewise under the name of *Taffilet*. All these parts have been divers times under the Dominion of the *Xeriffs* of *Fez* and *Morocco*. *Darba* is about a River of the same name; and where the River doth overflow it, it is indifferent fruitful. Among its chief Cities are, 1. *Benisabib*, 2. *Quiteria*, *Tagmadert*, from whence came the *Xeriffs* of *Fez* and *Morocco*. 3. *Taragalel*, of 4000 Houses, and a *Jewry* of 400. 4. *Tinzulin*, the most spacious of all. 5. *Timelguir*, of 2000 Families: And, 6. *Tesuf*, once the Royal City of all these Quarters, now in Ruins.

TAFFILET hath born the Title of a Kingdom, as well as *Dara*; and its chief City of the same name hath more than 2000 Families of *Bereberes*. To this place (as *Heylin* observeth) did *Mahomet* the Second, Son of *Mahomet Ben Amer*, and second King of *Morocco*, of this Family, confine his eldest Brother *Amet*, having took him Prisoner in Anno Dom. 1544. *Itata* is for the most part esteemed under *Taffilet*, though near upon as great. The Land belonging to the one and the other, are harsh and Mountainous, and situated between *Dara* and *Segelomessa*: *Taffilet* toward *Morocco*, from whence it is separated from Mount *Atlas*: *Itata* towards the *Saara* or *Desart*, where is that of *Zuenziga*.

SEGELOMESSA is one of the greatest and best Provinces or Kingdoms of all *Billedulgerid*. Its chief City bears the same name, is made famous by the *Arab* of *Nubia*: It hath been ruined and rebuilt within 100 and odd years; it is seated in a Plain, and on the River *Ziz*: Where, and on those of *Ghir*, *Tagda*, and *Farcala*, are likewise some other Cities; more than 300 walled Boroughs, and a great number of Villages. The Rivers overflow, and make fertile the Country, as doth the *Nile* in *Egypt*. The Inhabitants may raise about 120000 Men to bear Arms: they have sometimes been subject to their Lords, sometimes to the Kings of *Fez* and *Morocco*; now are partly divided into Lines and Communalities, and partly subject to the *Arabs*.

Under the name of *Segelomessa* we will pass with *Sanutus* 12 or 15 little Estates, which have but few Cities or walled Towns, and some Villages; Poor, and almost all subject to the *Arabs*. **QUENEG** hath 3 Cities, of which *Zebellinum* the chief, is on a very high Rock, and holds the passage of *Segelomessa* to *Fez* by Mount *Atlas*. *Gastrirum*, another City, is on the side of a Mountain. *Tamaracofum* is on a Plain. Besides these Cities there are about 12 Towns, and twice as many Villages. They have sometimes aided the *Xeriffs* of *Fez* and *Morocco* with 8000 Men. *Helel* is the principal of its quarter, and the residence of the Lord of *Malgara*. *Manunna* the chief of *Rheteb*, is peopled with *Moors* and *Jews*, all Merchants and Artizans. These places are on the *Ziz*, descending from the *Atlas* towards *Segelomessa*. *Subait*, *Humeledagi*, and *Ummelhesen* make each their Estate apart. The last is on the way from *Segelomessa* to *Dara*. The Land is quite Desert, covered with Sand and black Stones. **TEBELBETTA** hath 3 Cities, 12 Villages: **FARCALA**, 3 Cities, 5 Villages: **TEZERIN**, 5 Cities, 15 Villages: **BENIGOMIA**, 8 Cities, 15 Villages; the Cities *Mazalig*, *Abuhinanum*, and *Chasaira*, make each their Estate: **BENIBESSERI**, **GUACHDA**, and **FEGHIGA** have each 3 Cities, and some Villages. Those of *Feghiga* addict themselves to Traffic and Letters; gather quantity of *Dates*, as doth likewise *Guachda*: An excellent Mine of *Iron* employs those of **BENIBESSERI**, in carrying it to *Segelomessa*: A rich Mine of *Lead*, and another of *Antimony*, yields profit to those of *Chasair*, who carry them to *Fez*: the others bear only *Dates*, and their Inhabitants are oppressed by the *Arabs*, who rule over them. *Togda*, besides its Labourers of the Land, hath some Tanners of *Leather*, and the Soil yields Grains and Fruits.

I have made *Tegorarin* and *Zeb* the 4th and 5th Parts of *Billedulgerid*, taken in general. Under the name of *Tegorarin* I shall comprehend *Tesebit* and *Benigorait*; under that of *Zeb* I comprehend *Mezzab*, *Techort* or *Techortina*, and *Guerghela*.

TEGO-

Quarter of
Tegordin de-
scribed.

Province of
Zeh, and its
chief places.

Quarter of
Mizrab, its
chief places,
&c. described

**The Estates of
Trebort and
Guerquela.**

Quarter of
Billedulgerid,
with its parts
and chief pla
cet.

TEGORARIN hath more than 50 Cities or walled Towns, and 100 of 150 Villages; the chief of which are, *Tegorarin*, *Tuat*, and *Tegdeat*. The Country is abundant in *Dates*, yields *Corn* when watered; feeds no Cattle, except it be a few *Goats* for their Milk. Its People addict themselves to Trade, fetch *Gold* from the *Negroes*, which they carry into *Barbary*, and bring from thence several Commodities to carry to the *Negroes*: Receiving Strangers with delight, and letting nothing be lost that they can leave with them to enrich their Country. *Tesebit* or *Tesevin* hath 4 Cities, 28 Villages; the most part of the Men are black, the Women only brown and comely. All poor, as likewise in the Defart of *Benigorait*.

The Province of *ZEB* is more to the East than *Tegorarin*, it touches the Kingdom and Province of *Algier* and *Buggia*, near *Mefla*, on the North, is divided from the Regions of *Mezzab*, *Techort*, and *Guerghela*, towards the South, by divers Mountains. Its principal Cities are five, *Pescara*, *Borgium*, *Dufcha*, *Nefia*, *Teolacha*, and *Macaxa*. One part of these Cities were ruined when the *Arabs* entred into *Africa*, a part by *Barbarossa*; the most part afterwards reſtored. At preſent the *Turks*, the Kings of *Couco* and *Labe*, and the *Arabs*, receive ſome Tribute from them. The Inhabitants of *Pescara* live in the Fields in the Summer, being conſtrained to abandon the City by reaſon of the multitude of *Scorpions*, whoſe biting is mortal; as is that of the Black *Scorpions*, which are towards *Calaa* in the Kingdom of *Labe*: yet here the Inhabitants taking but two drams of a little Plant, it cures them though bitten, and preſerves them a whole year (ſaith the *Arab* of *Nubia*) from biting. *Borghia* is well peopled, hath many Artizans and Labourers. The Water which paſſes at *Deufen* is hot, as likewiſe that which paſſes at *Nefia*. The Inhabitants of *Teolacha* are proud and haughty.

The Quarter of *MEZZAB* is to the South of that of *Zeb*, and is a great passage from divers parts of *Barbary* to go towards the Land of the *Negroes*; which makes those of the Country trade on the one, and the other side. They have six walled Towns, and a great number of Villages; are Tributary to some *Arabs*.

The Estates of *Techort* and *Guerguela* have each their Prince or King ; they have sometimes been free, sometime Subjects or Tributaries to *Morocco*, *Telenfin*, *Tunis*, and in fine to the Kings of *Algier*, to whom they give a certain number of *Negroes* in form of Tribute. Each Estate takes its name from its chief City ; besides which they have each of them many walled Towns , and about 100 or 150 Villages, and about 150000 Duckats of Revenue : They can raise 40 or 5000 Men, but they are but bad Souldiers. *Techort*, though on the top of a Mountain, and having 2500 Houses, was yet taken by the *Turks* of *Algier* with a very few people and 3 Pieces of Cannon. They have abundance of *Dates*, from whence flows their Riches ; they want *Corn* and *Fish*, they treat *Christians* favourably, and are more civil than their Neighbours.

BILLEDULGERID, or *BELED-ELGERED*, that is, the *Country of Dates*, is a particular Province of *Billedulgerid* taken in general. This Province is above the Coast of *Tripoli*; and we add the Quarters of *Teorregu*, *Jaliten*, *Gademex*, and *Fezzen*. The particular *Billedulgerid* is so rich in *Dates*, that it takes thence its name, and hath communicated it to the neighbouring Countries; and to all that part which is above *Barbary*. Its principal Cities are *Tensar*, *Caphsa*, and *Nessava*, and a great number of Villages, *Teorregu* hath 3 walled Towns and 26 Villages, of which the chief bears the name of *Teorregu*. *Jaliten* 3 or 4 Towns, and 30 Villages, and the chief so called. *Gademex* hath 16 walled Towns, and about 60 Villages, the chief of which are *Gademex* and *Statio*. *Fezzen* more than 50 Cities or walled Towns, and above 100 Villages. The two last Elates are free, the other subject to the *Turks*, or to the Kings of *Tunis* and *Tripoli*. *Caphsa*, of old, *Capha*, which is believed to be built by the *Libyan Hercules*, is put by some among the Governments of *Tunis*.

EGYPT

The first shall contain the Twelve Cassilifs or Governments within EGYPT;

In the Lower EGYPT, the
Cassils of

EGYPT
may be di-
vided into
three Parts,
and then

The Second Part shall contain the Cities seated on the RED SEA, among which are those of

The Third shall be the Cassilif or Government of

BONHERA, or **BAERA**, without the True **EGYPT**, and in **LIBYA**, but under its Jurisdiction; whose chief places may be considered as as they lie

On the Sea, among which are
those of

Within Land, as-

[illegible]

EGYPT.

OF all the parts of *Africa*, *EGYPT* is the nearest, and only contiguous to *Asia*, and this Neighbourhood hath persuaded some Authors, both Ancient and Modern, to esteem *Egypt* either in whole, or in part, in *Asia*. At present we hold it all in *Africa*, and give for its bounds the *Red Sea*, and the *Isthmus*, which is between the *Red Sea* and the *Mediterranean*, on the East; the *Desarts of Barca* on the West, *Nubia* on the South, and the *Mediterranean Sea* on the North. The *Nile* alone washes this Region through its whole length, which is from its *Cataracts* to the Sea, about 20 Leagues or more; its breadth not being above half so much, and of that breadth, that which is between the Mountains, which incloses the Valley of *Nile* on the East, and the Coast of the *Red Sea*, is but *Desart*; there being nothing inhabited but the Valley, which lies on both sides the *Nile*, inclosed with Mountains, and very narrow in the higher part of *Egypt*; but enlarging it self much more as it approaches the Sea. Of this Figure which the Country makes, the Ancients have taken occasion first to divide it into high and low; after into high, middle, and low: Higher, which they called *Thebais*, by reason of *Thebes*, at present *Saida*; Middle, which they called *Heptanomos*, by reason of the 7 *Nomi*, *Provoostships* or Governments it contained, at present *Bechria*, or *Demesor*; Lower, and more particularly *Egypt*, and sometimes *Delta*, the best part of the lower having the form of a Greek Δ , the two sides of which were inclosed by the branches of the *Nile*, and the third by the Sea, and this part is now called *Erris*. The *Romans* changed something in the number, and in the names of these Provinces, which we shall now omit.

At present *Egypt* is divided into 12 principal *Cassilifs*, *Sangiacats* or Governments, of which five answer to the Higher *Egypt*, viz. *Girgio*, *Manfelout*, and *Abensuef*, on the left hand of the *Nile*; *Minio* and *Cherkassi* on the right, still descending the *Nile*; two, with the Territory of *Cairo*, answer to the Middle *Egypt*, viz. the *Cassilifs* of *Fium* and *Giza* on the left, and *Cairo* with its Territory on the right hand of the *Nile*: then four others answer to the Lower, viz. *Mansoura*, *Garbia*, *Menoufia*, *Callioubeck*, or *Bashieh*, with *Alexandria* and its Territory: for the *Cassilif* of *Bonhera*, or *Baera*, is out of the limits of the ancient and true *Egypt*, and in *Libya*, which passes commonly under the name of the Kingdom of *Barca*.

EGYPT is very famous in that they would make us believe, that the first Men were here formed; and as there are yet formed a great number of Creatures, which appears when the Inundation of the *Nile* diminished; saying, that the Gods, after them the Heroes, and in fine, Men have reigned for almost an incredible number of years. Of these Gods there are three degrees, of which *Pan* was the most ancient of the eight first, *Hercules* of the 12 second, and *Dens* of the third. They divide the times of their men Kings by *Dynasties*, that is, Dominations of divers Families; and give so great a number to their Kings, and so great a time to their Reigns, that they must have begun long before the Creation of the World; and likewise by their account, their Gods and Hero's had reigned before Men the space of 20 or 25000 years: They attribute the foundation of most of their Cities to their Gods, Hero's, and Kings; and these they make, and build many *Labyrinths*, *Pyramids*, *Obelisks*, *Colosses*, &c. not knowing how to expend their Treasures, or employ their People.

In the History of the Kings of *Egypt*, one *Sesoftris* or *Sesoftris*, subdued all *Europe* and *Asia*, if we will believe them: *Joseph* an Hebrew servant, and after master of the House of *Potipher*, from the prison, rose to such favour with the King, that he alone had almost the whole Government of the Kingdom, established his brothers in *Egypt*; and their descendants multiplied so that in the end, the Kings of *Egypt* became jealous and fearful, lest they should make themselves masters of the Kingdom, another *Sesoftris* subdued *Syria*, *Assyria*, *Media*, the Isles of *Cyprus*, &c. and was esteemed as much, or more than any of his predecessors. *Mephres* or *Memnon* it was that dedicated his Statue to the Sun, which it saluted at its rising, and they drew some sign of Joy, so artificial was it made. *Busris* treated the Hebrews so ill, that he left him the name of an infamous Tyrant. *Genches* was the *Pharaon* who was drown'd in the *Red Sea*: *Proteus* gave occasion to say that he turned himself into a *Lion*, sometimes into a *Bull* or *Dragon*, &c. by reason of his different arming his head, or possibly for his different actions. *Remphis* had no other care but to keep up riches, *Chemnis* caused to be built the first and greatest *Pyramid*, employing therein three hundred sixty thousand men, for the space of twenty years, of which more anon. *Sesac* or *Sesouchis*, armed four hundred thousand Foot, sixty thousand Horse, and One thousand two hundred Chariots against *Rehoboam*; took and pillaged *Jerusalem* and its Temple. *Bacchoris* though weak of body, was so prudent, that he gave Laws to the *Egyptians*. This was he that leagu'd himself with *Hosea* against *Salmanazar* King of the *Babylonians*. *Sevecho* or *Seheko* reigning in *Egypt*, *Sennacherib* King of the *Assyrians* being come to assault him, an infinite number of Wild Rats, known in one night the *Arrows* in the *Quivers*, and the *Strings* or *Cords* of the *Bows*, and the *Thongs* of the *Assyrians Armes*, which caused on the morrow both their flight, and overthrow. *Necao* or *Necaus* began the Channel between the *Nile*, and the *Red Sea*, passed by the *Meridional*, or *Ethiopian Ocean*, by the *Occidental* or *Atlantick Ocean*, reëntred by the streight of *Gibraltar*, and returned into *Egypt*, at the end of three years; he vanquished *Jofas* King of *Judea*, and was also vanquished by *Nebuchodonosor*. *Apries* happy in his beginnings, was in the end defeated by those of *Cyrene* in *Libya*; and saw all *Egypt* revolt, who chose for their King *Amasis*, under whose reign there were counted twenty thousand Cities in *Egypt*, as *Pliny* saith. Under this *Amasis*, the Estate fell into the hands of the *Persians*, after to the *Macedonians* (*Greeks*), and then to the *Romans*, &c. Among the Kings of *Persia* who ruled in *Egypt*, *Cambyses* was the first and best known; among the *Macedonians* and *Greeks*, *Alexander* the great; after whom the Kings of *Egypt* took the names of *Ptolomies*, from the name of him who first bore the title of King after *Alexander*, but after the *Romans* had to do with the affairs of *Egypt*, there was nothing more remarkable of their History but *Cleopatra*; after whom *Augustus* reduced this Kingdom to a *Roman Province*: and it remained under the *Romans*, and under the *Emperours* of the East, near seven hundred years, till about the year of Grace six hundred and forty, that the *Arabs* seized it under their *Califs*, who resided first at *Medina*, then at *Bagdad*, *Damascus*, and sometime at *Cairo*. The *Soldans* abolished this *Califat* in *Egypt*, and among them the *Christians* have but too well known one *Saladine*, who drove them out of a great part of the Holy Land. Among these last *Soldans*, *Campson*, *Gaurus* and *Tomombey* were esteemed valiant; yet were so ill served, that the *Turks* under their Emperour *Selimus*, became Masters of *Egypt* in 1518, and do yet possess it.

At present the Port sends a *Bassa* to command in *Egypt*, and the 12 *Cassilifs* or *Governours* of the Country depend on this *Bassa*, and are as it were only his Farmers: They give him every year a certain number of *Purses*, (every *Purse* of 750 or 760 *Lion dollars*) some 25, 30, 40, some only 10 or 12, according to the goodness of the Country, or the greatness of their *Cassilifs* or *Governments*, some having only 40 or 50 Towns, other 100, 200, 300 and more; besides these *Purses* for the *Bassa*, they give to the *Tibaja* or *Haja* (who is as it were his *Chancellor*) and other Officers, about the sixth, or at least the fifth part of what they

The Tribute they pay to the *Bassa*.

The Grand Signior's revenue from Egypt.

The several Castles in Egypt.

City of Cairo described.

See also Cesar's description of Cairo.

They give to the *Bassa*. And for the Prince, or *Grand Signior*, some pay 6 times more, others ten times more then they give to the *Bassa*; and besides these *Purses* they furnish a certain number of *Ardeps*, or measures of *Grain*, *Pulse*, &c. The constant Profit or Revenue that the *Grand Signior* draws from this Kingdom is 1800000 *Zeccheens* yearly, each *Zeccheen* is valued at 9s. Sterling, which is 8 millions and 100000 £. Sterling, and this Revenue is divided into 3 equal parts, of which one is allotted for the furnishing and accommodating the Annual Pilgrimage to *Mecca*; the second goes for the payment of the Souldiers and Officers, with other necessary charges for the management of the Kingdom; and the third and last goes clear into his *Chequer*.

The *Castles* of *Girgio*, or of *Sait* is one of the best and richest; it passed not above 180 years since for a Kingdom, and received its *Bassa* from the *Port*. It hath likewise its *Dievan*, disposes its *Castles*, or under-Governments, which lie in its extent, the Soil is fruitful, bears much *Corn*, and feeds many *Cattle*. The *Castles* of *Manfelout*, and *Benefuef*, are not so great but better peopled; and worth little less then that of *Girgio*. On the other side of the *Nile* are those of *Minio* and *Cherkeff*, which have as large an extent as the other 3 together; but are incomparably less as to the goodness, scarce yielding the tenth part of what the others do; so great difference is there in being at the foot, and on the East of a Mountain. These 5 *Castles* answer to the higher *Egypt*, or the *Thebas* of the Ancients; in which are a great many Cities, Walled Towns and Villages, as are generally found throughout all *Egypt*, as anon I shall have occasion to treat of. Those *Castles* of *Fium* and *Giza* with the Territory of *Cairo* to the middle. The *Castles* of *Fium* and *Giza* have very good Earth, and which is easily watered by the *Nile*; it yields store of *Grain*, *Fruits*, as *Raisins*, &c. *Flax*, *Milk*, feeds many *Cattle*, &c. but the *Castles*, or Governor of the last hath not a free sword, that is, hath not power of life and death as he pleases, as the others have, being out of the course of the *Arabs*, and too near *Cairo*, of which a word or two.

This City of *Cairo* hath for a long time been all the Ornament of *Egypt*. It was the Residence of the *Sultans*, is now of the *Bassa*, some make it very great, others much less; the first compose it of 4 parts, to wit, Old *Cairo*, New *Cairo*, *Boulde* and *Charafat*; there being some void places between each; they say that these 4 parts together with their Suburbs may be about 10 or 12 Leagues long, and 7 or 8 broad; nor give they it less then 25 or 30 Leagues Circuit. They count 16 or 18000 Streets, 6000 *Mosques*, and if the particular *Oratories* be comprised above 20000, as also they account about 200000 Houses, among which are divers *Bazars* or *Markets*, *Canes* or *Magazines* of certain *Merchandizes*, many *Hospitals*, and magnificent structures. The *Castle* is great, strong, and well fortified, situate on the top of a Rock, which overlooks the City; and discovers the Plain on all sides, even to the loss of sight. The buildings, paintings, and other Ornaments which yet remain, do testify the magnificence of the *Soldans*. This *Castle* (as *Heylin* noteth) for largeness, may rather be held for a City, then a *Castle*, enclosed with high and strong Walls, and divided into many Courts, in which were stately buildings, but now hath lost much of its glory; being in part destroyed by *Selimus*; that which now remains, serveth for the Court or habitation of the *Bassa*. In and about this City, are abundance of delicate *Orchards*, which are places of great delight in which are excellent *Fruits*, *Walks*, &c. and nigh to this City, there is a pleasant Lake which is much frequented by the *Inhabitants*, who for their recreation pass some time daily on this Lake in boates, for their further mutual society, and seeing their friends and acquaintance.

Cesar *Lambert* of *Marfillsa* in his relations of the year 1627, 28, 29, and 32, saith, that *Cairo* (separated from the other Cities and Towns) is not so great as *Paris*; (and if an eye witness of both may be believed he speaks truth) and takes for witnesses some eminent *French Gentlemen* then at *Cairo*; who confesses that joyning it to the Cities and Boroughs adjacent, it may with reason be called *Grand Cairo*; but however he maintains this

this to be but almost the shadow of *Cairo*, as it was 100 and odd years since, so much is the trade diminished, and that according to the report of the people of the Country. He saith likewise that the *Castle* hath been much greater, and more magnificent then it is at present, and observes several footsteps of proud buildings, now of no use; and after all, saith, that this is not strong. *Sinay* in his book of *Tavels* among other remarkable things, makes this description of it, saying, that this great City called *Grand Cairo*, is inhabited by *Moslems*, *Turks*, *Negroes*, *Jews*, *Coptes*, *Greeks* and *Armenians*, who are observed to be the poorest, and yet the most laborious, the civillest and honestest of all others; they are not subject to the *Turks*, neither do they pay him any Tribute of Children, as other *Christians* do; and if they happen to be taken in Wars, they are freed from bondage; and this privilege they gained by a certain *Armenian* that foretold the greatness and glory of *Mahomet*. Here he saith they hatch Eggs by artificial heat, and that in exceeding great numbers, which they do in this manner. In a narrow entry, on each side are 2 rows of Ovens, one over the other. On the floors of the lower they lay *Flax*, over those *Mats*, and upon them Eggs. The floors of the upper Ovens, are as roofs to the under, being grated over like kilns, only having tunnels in the middle, which have covers over them. These gratings are covered with mats, and on them they lay dry and pulverated dung of *Camels*, &c. three or four inches thick; at the farther and higher sides of these upper Ovens are trenches of *Lime*, which are about a handfull deep, and two handfulls broad, and in these they burn the aforesaid dung, which yieldeth a gentle heat, without any fire, under the mouths of the upper Ovens are conveyances for the smoak; having round roofs, with vents at the top to open and shut; and thus ly the Eggs in the lower Ovens for the space of eight daies, turning them daily, and looking that the heat be gentle and moderate, then they put out the fire, and put the one half into the upper Ovens, then they shut all close, and let them alone ten daies longer, at which time they become hatched.

I shall conclude my description of this City, with some observations which Sir *Henry Blunt* hath observed during his abode there, first, he saith that there are *Mosques* and *Oratories* to the number of thirty five thousand; some of which are very stately and magnificent; next he saith there is twenty four thousand noted Streets, besides by Streets and Lanes, and some of these Streets are about two miles in length, and to all these Streets, at each end, there is a *Door* which every night is lockt up and kept guarded, by which means tumults, robberies, fire or the like is prevented; and without the City to hinder the Incurfions of the *Arabs* from abroad, there doth also watch every night four *Saniacks*, with each of them one thousand horsemen, the number of men that do every night guard this City is twenty eight thousand. This City is built, he saith, after the *Egyptian* manner, high, and of large rough stones, with part of Brick, the Streets are but narrow, but as the Houses decay, they are rebuilt after the *Turkish* manner, mean, low, and made of Mud and Timber; yet their *Palaces* are stately, with spacious Courts, wherein are fair Trees to keep them from the heat of the Sun; also other Courts belonging to their *Palaces* adjoining to curious Gardens, wherein are variety of excellent fruits, and watered with Fountains, nor want they any state in their Edifices, which are vast, lofty, and very magnificent. This City notwithstanding its greatness, he saith, is so exceeding populous, that the people pass to and fro, as it were, in throngs; near to this City are *Josephs* 7 *Granaries*, now brought to ruines, yet 4 of them are so repaired, as they are made use of to keep the publick Corn. On the South end of this City, he saith, there yet remaineth a round Tower, wherein *Pharaohs* daughter lived when she found *Moses* in the River which runs hard by it.

South West of *Grand Cairo*, on the other side of the *Nile*, about four Leagues distance, stands the three oldest and greatest *Pyramids*; the *Jews* affirming them to be built by *Pharaoh*, who was drowned in the *Red Sea*; the fairest for himself, the next for his Wife, and the least for his only Daughter. The greatest of the three, and chief of the Worlds Seven Wonders.

Sinay's description of Cairo.

The hatching of Chickens.

Sir Henry Blunt's description of this City Cairo.

is made in form *Quadrangular*, lessening by equal degrees; the Basis of every Square, is 300 paces in length; and so lessening by degrees, ascending by 250 steps, each being about 3 feet high; the Stones are all of a bigness, and hewed four square. And in this, as also in the others, there are several Rooms. There are also about 16 or 18 other *Pyramids*, but of less note, and not so ancient as these 3 aforesaid are, which I shall pass by. Nigh to this City, in the Plain, is the place where they did inter their dead; in which, they used such art, that the bodies of their dead remain to this day perfect sound; and these we call *Mummies*. The places where these bodies lie, are about ten fathom under ground in Vaults, either in the Sand, or upon an open Stone. The Earth is full of dry Sand, wherein moisture never comes, which together with their art of Embalming them, doth thus preserve the bodies for some thousand years past. In the brest of these *Mummies* is set a small *Idol*, some of one shape, some of another, with *Hieroglyphicks* on the back side of them. This City of *Grand Cairo* was formerly of a very great Trade, but that which hath now ruined it, as likewise that of *Alexandria*, is the discovery of the *East Indies*, by the *Cape of Good Hope*, by which, the *English*, *Portugals* and *Hollanders*, at present go to these *Indies*, and bring into the West all those *Drugs*, *Spices*, *Precious Stones*, *Pearls*, and a thousand other *Commodities*, which came before by *Aleppo*, or by *Egypt*; but passing by *Cairo*, let us come to the other *Cassitis*.

The *Cassitis* is the lower *Egypt*.

In the lower *Egypt*, are those of *Garbia*, *Menoufia*, and *Cassionbech*, within the *Delta*, and between the Branches of the *Nile*. That of *Manjoura*, without, and Eastward towards the *Holy Land*, and *Arabia*: Likewise without, and Westward of the *Nile*, is the *Cassitis* of *Bonhera* or *Baera*, which stretches it self from the *Cape of Bonandrea*. This last *Cassitis* is almost quite out of *Egypt*, though within its Government, and the length of its *Sea Coast*, not less than that of all *Egypt* along the *Nile*: But that which is distant from the *Nile*, is subject to the *Arabs*, and very Desert; that which is near it is better worth. Its Governor is obliged to Mannel a *Callech* or *Channel* of 100000 paces in length, to carry water from the *Nile* to *Alexandria*; and when a new *Bassa* arrives in *Egypt*, this Governor hath likewise to furnish him with *Horses* and *Camels* for himself, his Train and Baggage, and to defray his charges from *Alexandria* unto *Cairo*. But since the Wars with the *Venetians*, the *Bassa's* have generally come round by Land, and not adventured by Sea to *Alexandria*. Among the Desarts of this *Cassitis*, those of St. *Macaire* have had 360 odd *Monasteries*: And here is likewise to be seen, a *Lake of Mineral Water*, which converts into *Nitre*, the *Wood*, *Bones*, or *Stones*, that are thrown into it.

The *Cassitis* of *Cassionbech*, *Menoufia* and *Garbia*, being between the Branches of the *Nile*, and out of the course of the *Arabs*, ought to be esteemed the best in *Egypt*; and particularly, the last which yields more abundantly *Sugar*, *Rice*, *Milk*, *Grains*, *Oyl*, *Flax*, *Herbs*, *Honey*, *Fruits*, &c. And *Maala*, one of its principal Cities, which they call the *Little Medina*, is a place of great devotion with them, where they hold yearly a famous Fair, which the Governor opens with great pomp, observing many Ceremonies. The *Cassitis* of *Manjoura* doth produce the same *Commodities*, but not in so great a quantity, though of a greater extent than *Garbia*; but more over it yields *Cassa*. These four or five *Cassitis* take up the whole Coast of *Egypt*, and of its Government, and on this Coast are the Cities of *Alexandria*, *Rosetto*, *Damiata*, and some others.

The City of *Alexandria*.

Alexandria, among the *Turks*, *Scanderia*, was built by the command of *Alexander* the Great, and by him peopled with *Greeks*, immediately after the conquest of *Egypt*; and the Model traced by the *Architect* *Dinocrates*, who for want of other matter, made use of *Wheat-flower* to mark out the circuit; which was taken for a good *Augury*. It was afterwards beautified by many, but especially by *Pompey*. It is situated Westward of the *Delta*, over against the Isle of *Pharos*, and built upon a Promontory, thrusting it self into the Sea; with which, on the one side, and on the other, the *Lake Mareotis*. It is a place of good defence; its circuit is about 12000 paces, adorned with many

many stately *Edifices*, among which, the most famous was the *Serapion*, or the Temple of their god *Serapis*. Which for curious workmanship, and the stateliness of the Building, was inferior to none but the *Roman Capitol*; then the Library erected by *Ptolomy Philadelphus*; in which there were 200000 Volumes, which *Demetrius* promised to augment with 300000 more. And this in the War against *Julius Caesar* was unfortunately burnt. And this is that *Philadelphus* who caused the *Bible* to be translated into *Greek* by the 72 *Interpreters*, which were sent him by the *High Priest Eleazar*. In this City, in *Ann* 180, *Ganemus* read *Divinity* and *Philosophy*, who, as it is thought, was the first institutor of *Universities*. This City hath been enriched with 400 high and strong *Towers* and *Towers*; and the *Ptolomies* or *Kings of Egypt*, having made here their residence after the death of *Alexander* the Great, and caused many stately and magnificent *Palaces* to be built: Under the *Houses* are *Cisterns* sustained with *Pillars of Marble*; as also Pavements for their refreshment, being their Summer habitation; their ancient custom, by reason of the heat, being to build their Houses as much under ground as above, the upper part serving for their Winter habitation. It was their custom also to erect great *Pillars of Marble* or *Porphyry*; among others, that of *Rompey*, which stands upon a four square Rocky Foundation without the Walls, on the South side of the City: It is round, and of one entire piece of *Marble*, and of an incredible bigness, being above One hundred foot high, not far from the place where he was slain in a Boat at Sea, and where his ashes were laid. In this City are also two square *Obelisks*, full of *Egyptian Hieroglyphicks*, of a vast bigness, and each of one entire piece of Stone; said to be thrice as big as that at *Rome*, or that at *Constantinople*. Near these *Obelisks*, as *St. Henry Blunt* relateth, are the ruins of *Cleopatra's Palace*, high upon the shore, with the private Gate, whereat she received *Mark Antony* after their overthrow at *Actium*. And he saith, That about a bow shoot further, upon another Rock on the shore, is yet a round *Tower*, which was part of *Alexanders Palace*. This City, after the *Romans* were Masters of *Egypt*, was maintained so rich, so well peopled, and so powerful, that it was esteemed the second of their Empire: And when the *Arabs* seized it, there was counted 12000 Sellers of *Herbs*, 4000 *Bathing-houses*, 400 *Play-houses*, &c.

Thus was the former state of this City, but at present almost a heap of ruins, especially, the East and South parts; not the moiety of the City being inhabited. And were it not for some conveniences of Trade, or the like, more then any pleasure of the place, by reason of the evil Air which reigns there, it would be soon left wholly desolate. It is now inhabited by a mixture of Nations, as *Turks*, *Jews*, *Greeks*, *Moors*, *Copties* and *Christians*. Now remarkable for a *Mosque*, in which *St. Mark*, their first *Bishop*, was said to be buried: Yet their rests still within, and near the City, many *Obelisks*, *Columns*, Foot-steps of proud Buildings, &c.

Raschit or *Rosetto*, a pritty little City, seated on the *Nile*, four miles from the *Mediterranean Sea*; a place of no strength, but of a great Trade, and well furnished with several sorts of *Commodities*. Its Buildings are stately, both within and without, and is only defended by a *Castle*, being without Walls, or other Fortifications. This City in ancient times, was noted for a place of all kinds of *Beastliness* and *Luxury*. *Damiata* is a fair City, and its Land excellent, famous for the often Sieges laid unto it by the *Christian Armies*, in *Ann* 1220. Who for 18 Months continuance, did stoutly defend themselves; till in the end, the Enemy hearing no noise, some of them did adventure to Scale the Walls, who finding no resistance, the Army marched in; who then found in every house and corner, heaps of dead bodies, and none to give them burial; and searching them, found them to die of *Famine* and of the *Pestilence*, which grievously raged amongst them: Which lamentable spectacle, must needs add terror to the beholder. This City was built, as some Authors say, out of the ruins of *Pelusium*, which was built by *Peleus*, the Father of *Achilles*; who for the murder of his Brother *Phocus*, was;

The City of *Rosetta*.

The City of *Damiata*.

was by the gods commanded to burge himself in the adjoining Lake. This place (as *Herodotus* saith) was the *Episcopal See* of *St. Adore*, surnamed *Pelusios*, whose Pious and Rhetorical *Epistles* are yet extant. And at this place *Prothmy*, the famous *Geographer*, drew his first breath. And these three Cities, after *Cairo*, are at present the fairest of *Egypt*. There are abundance of other Cities which are yet in some repute; as *Suez* and *Cosby*, seated on the *Red Sea*; *Suez* noted for its *Arsenal*; and *Cosby* for its reception of the *Merchandizes* of the East; and *Suez*, a fair Town not far from *Cairo*, on the *Nile*, by some said to be the dwelling place of *Joseph* and *Mary*, whether they fled with *Christ* for fear of *Herod*, where are yet the ruins of a fair and beautiful Temple, which as they say was built by *Helena*, the Mother of *Constantine*, with several officers too tedious to name. But to speak truth, *Egypt* is nothing in regard of what it was under its first Kings, with several others, as I have set down in my *Geographical Tables*, as they are found in the said Twelve *Cassidors*, and are all commodiously and pleasantly seated on the Banks of the *Nile*, which traverses the whole Countrey, dividing it self into several Streams, especially in the Higher *Egypt*, where with several Mouths it falls into (or receives) the *Mediterranean Sea*. Also I have noted several Cities seated on the *Red Sea*, to which I refer the Reader.

The Lakes of
Buchera and
Moeris.

In this Countrey are two Lakes, the one is called *The Lake of Buchera*, in the Territory of *Alexandria*, and is about twelve Leagues in length, and seven in breadth; the other is called *The Lake of Moeris*, in the *Cassidors* of *Giza* and *Fium*, and is about 27 Leagues in length, and 20, 15, 10, 5; and 3 in breadth.

Thus much for the Description of the Countrey; In the next place, I shall treat of the *Inhabitants*, as to their *Laws*, *Religion*, *Customs*, *Antiquities*, *Hieroglyphicks*, *Statue*, *Habit*, &c. Also the *Fertility* and *Rarities* of the Countrey, amongst which I shall end with the Description of the *Nile*.

Their Laws &
execution of
Justice.

Their *Laws*, as to *Justice* and *Government*, are perfectly *Turkish*; and therefore I shall refer the Reader to the Description of the *Turks*, as ye may find it treated of in the Description of *Constantinople*, their *Metropolitan City*. Yet for rigor in their punishments, they exceed other parts of *Turkey*, and that by reason of the treacherous, malicious, and base dispositions of them; their executions being different according to the quality of the Crime, for some offences they use slaying alive; for others impaling; cutting them off with a red hot Iron at the Waist; for others ointing with Honey in the Sun; also, some they hang by the Foot, and the like cruelties. The ancient People of this Countrey were *Heathens*, worshipping the *Sun*, *Moon* and *Stars*, sacrificing to *Apollo*, *Jupiter*, *Hercules*, and the rest of the gods; also attributing divine honors to *Serpents*, *Crocodiles*, as also to *Garlick*, *Onions*, and *Leeks*. But the god which they most adored, was *Apis*, a coal-black Ox, with a white Star in his Fore-head, two Hairs only in his Tail, and the form of an Eagle on his back; but now *Mahometism* is much received amongst them. The *Christian Faith* was here first planted by *St. Mark*, who was the first Bishop of *Alexandria*. And these *Christians* are all of the *Jacobites* Sect, observing the same Customs and Forms of Ceremonies in their Religion, as those formerly treated of in *Asia*.

Its antiquities.

Among the many *Rarities* or *Antiquities* of this Countrey, are the *Pyramids*; as also the *Obelisks* and *Columns* spoken of before; next on the Banks of the River *Nile*, stood that famous *Labyrinth* built by *Psammicus*; a place of an exceeding great bigness, containing 1000 Houses, besides 12 Royal *Palaces*, within an intire Wall, Which had but one entrance; but exceeding many turnings and windings, which caused the way to be exceeding difficult to find; the building being as much under ground as above. The buildings were of *Marble*, and adorned with stately *Columns*: The Rooms were fair and large, especially a *Hall*, which was the place of their general Conventions, which was adorned with the Statues of their gods; and composed of polished *Marble*. Not far from the *Pyramids* doth stand the *Colossus*, being in form of an *Ethiopian Woman*, which heretofore was adorned as a *Rural Deity*.

Tihs

This *Colossus* is of a vast bigness; and is made out of the natural Rock, together with huge flat Stones. Also the Isle and Tower of *Pharos*, opposite to *Alexandria*; a place of a great bigness, and of great rarity and magnificence; its Watch-Tower, was of an exceeding great height, being ascended by *Steps*, and on the top of this Tower there were placed every night abundance of *Lanterns* with Lights, for the direction of *Sailors*, by reason of the dangerousness of the Sea on that Coast, being so full of Flats.

The *Egyptians* instead of *Letters*, made use of *Hieroglyphicks*; of which, an example or two shall suffice; viz. For God, they painted a *Falcon*; for *Eternity*, they painted the *Sun* and *Moon*; for a *Year*, they painted a *Snake* with his Tail in his Mouth; for any thing that was abominable, they painted a *Fish*; with a thousand more in the like nature too tedious to name. They are said to be the first that invented *Arithmetick*, *Geometry*, *Musick*, *Philosophy*, *Physick*; and by reason of the perpetual serenity of the Air, found out the course of the *Sun*, *Moon* and *Stars*; their *Constellations*, *Risings*, *Settings*, *Aspects* and *Influences*; dividing by the same, Years into Months, grounding their divinations upon their hidden properties. Also the first *Necromancers* and *Sorcerers*. These People are much given to *Luxury*, prone to *Innovations*, *Cowardly*, *Cruel*, *Faithless*, *Crafty* and *Covetous*; much addicted to *Fortune telling*, wandering from one Countrey to another, by which cheating tricks they get their livelihood: But these people are not the same as the ancient *Inhabitants* were, being a Misceline of other Nations as aforesaid, these People not adding themselves to *Arts* or *Letters*, as the former did. They are of a mean stature, active, of a tawny complexion, but indifferently well featured; and their *Women* fruitful in Children, sometime bringing two or three at a time.

Their several
Hieroglyphicks.

Their habit is much after the *Turkish* drefs, in which they are not over curious.

Their habit.

They have in this Countrey a Race of *Horses*, which for one property may be esteemed the best in the World; that is, they will run without eating or drinking, one jot, four daies and nights together: And there are some *Egyptians*, which with the help of a Sway bound about their body, and carrying with them a little Food to eat, are able to ride them. For shape, these *Horses* do not surpass others; and for this property they are held so rare, and esteemed at three years of age, to be worth 1000 pieces of Eight, and sometimes more: And for this breed of *Horses*, there are Officers appointed to look after them, and to see the *Foles* of them, and to register them in a book with the colour, &c. which they receive from the testimony of credible persons, to avoid cheats. But these *Horses* are not fit for any other then such a Sandy Countrey, by reason of their tender feet.

But let us come to the *Nile*, which is the principal piece in all *Egypt*: I hold it for one of the most considerable Rivers of the World. The length of it; course, and the divers Mouths by which it discharges it self into the Sea. Its inundation at a perfixed time, the quality of its Waters, and the fertility and richness it leaves where it passes, are my inducing Reasons. It begins towards the Tropick of *Capricorn*, ends on this side that of *Cancer*, running for the space of above 45 degrees of *Latitude*, which are 11 or 1200 Leagues in a streight line, and more then 2000 in its course, crosses a great Lake, embraces the fairest River Island, and waters the richest Valley, we have knowledge of. Among its *Inhabitants* this is particular, that naturally some are black and some white; and that in the same time, the one have their Summer, or their Winter; when the others (which is not known elsewhere) have their Winter, or their Summer. Its true Spring is likewise almost unknown; it is certain that the River that comes out of the Lake of *Zair*, and takes its course towards the North, is that which we call the *Nile*: But this Lake receives a number of Rivers, which descend from the Mountains of the *Moon*. To tell whether any of these Rivers bears the name of *Nile*, and which they be, cannot be done: Though there have been Kings of *Egypt*, *Roman Emperors*, *Sultans*, and Kings of *Portugal*, which have made the search.

In

In sum, and according to *Ptolomy*, who hath said as much as any hitherto, it must be that most advanced towards the South, and which washes at present the City of *Zamberg*, crosses the *Lake* of the same name, or of *Zahr*; the City of *Zahr* being likewise on the same *Lake*. At the coming out of the *Lake*, the *Nile* passes between the Kingdoms of *Damout* and *Goyame* in the *Abissines* receives a little on this side the *Equator*, the *Zafflan*, which comes out of the *Lake* of *Zafflan*; near the Isle of *Mero* or *Gueguere*, the *Cabella* or *Tugueszi*, which descends from the *Lake* of *Barcena*; and at the entrance into *Egypt* the River *Nubia*, which crosses *Nubia*, and comes from *Saupa* and *Billedalgerid*; and apparently answers to that, which *Juba* believed to be the true *Nile*. These 3 Rivers are the greatest of all those which disburthen themselves in the *Nile*, and carry a great many others. But in *Egypt* the *Nile* remains alone, passes between two ranks of Mountains, approaching the Sea; the Valley enlarges, and the *Nile* divides itself into many Branches, and glides by many Mouths to the Sea. The Ancients made account of seven, nine, or more, now except in the time of Inundation, there are only two principal ones, which pass by *Rosetto* and *Damiata*; and three lesser by *Turbet*, *Bourles* and *Misala*. These not being Navigable, but during the Inundation, the others always. This Inundation of the *Nile* is wonderful, some attribute it to certain *Etesian* Winds, that is, North-West, which repulse the current, and make it swell: Others to the quantity of *Shoers* which melt; and to the continual *Rains* which fall there, where the *Nile* hath its beginnings, or there where it passes. Others will have the Ocean thence to swell, and under ground communicate its waters to the *Nile*, &c. But there are so many different opinions touching the cause of this Inundation, and so many Reasons are given *pro* and *con*, that a whole treatise might be made of it. This Inundation begins about the sixteenth or seventeenth of *June*, increases for the space of forty daies, and decreases for other 40 days; so that its greatest height is about the end of *July*, and it ends about the beginning of *September*. If it begins sooner or later (which is observed by certain Pillars in the Towns; and particularly in the Castle of *Rhoda*, which stands in a little Isle opposite to old *Cairo*, and where the *Bassa* resides, during the solemnity of opening the Channel, which passes through and fills the Cisterns of *Grand Cairo*; and in the Fields by the *Alpes*, *Tortois*, *Craw-fish*, *Crocodiles*, &c. who remove their Eggs or Young from the Banks of the *Nile*, immediately before the Inundation, and lay them there where it will bound) they give judgment, whether there will be more or less Water; and the people are advertized, to the end, they may take order for what they have to do.

The King *Mari*s had expressly caused to be dug the *Lake* of *Mari*, to receive the Waters of the *Nile*, when it had too much, or to furnish it when too little: At present they remedy it when little, by *Channels*, advanced towards the higher Country, that they may be water'd: When too much, by certain *Flood-Gates* which they open to let the Water slide away.

For the effect of this Inundation, is, That all that the *Nile* covers with its Water, is made fruitful, and no more. It *Rains* sometimes in the Lower *Egypt*, very little in the Higher, and not sufficient to moisten the Earth; but when the *Nile* increases too much, or too little, it doth hurt: At 12 Cubits, it is yet Famine; at 15 or 16 sufficient; at 18 or 20 abundance. The little cannot moisten the highest Lands, and nearest the Mountains. That which lies too long, leaves not time to Sow the lower Grounds; but the little, or none at all, is more dangerous than the too much; and often besides the Famine, presages some other misfortune near. So before the death of *Pompey*, there was little; before that of *Anthony* and *Cleopatra*, none at all.

Moreover, the Dew which causes this inundation, is imperceptible, as the same Author says: He assures us however, that so soon as it falls, the Air is purified; and all *Diseases* and *Pestilential Fevers* of the Countrey, (which are there very rife) cease; which makes it appear that these Waters are excellent, and indeed all Authors agree, that the Waters of the *Nile* are sweet, healthful, nourishing, and that they keep a long time without corrupting; so that they be discharged from the Mud and Sand they bring along with them

In Inundation and effects.

them from the Grounds, through which they pass. The first Kings of *Egypt* made too much account of them, that they drank nothing else than the Waters of *Nile*; and when *Phuladelphus* married his Daughter *Berenice* to *Antiochus* *Theos*, King of *Assyria*, he gave order, That from time to time there should be the Water of *Nile* carried her, that she might drink no other. And the fruitfulness which these Waters cause, is not only known by their making the Earth so exceeding fertile, (which otherwise is as barren) so that if they do in a manner but throw in their Seed; they have four rich Harvests in less than four Months; and that they produce and nourish an infinite number of strange Creatures, as *Crocodiles*, which from an Egg no bigger than that of a *Goose*, cometh to be 25, and sometimes to 30 foot long. His Feet are armed with Claws, his Back and Sides with Scales so hard not to be pierced; but his Belly soft and tender, by reason of which he receiveth many times his death's wound: His Mouth is exceeding wide, hath no Tongue; his Jaws very strong, and armed with a sharp set of Teeth as it were indented: His Tail is equal to his Body in length, by which he infoldeth his prey, and it is a pretty while ere he can turn himself; so that if it be not just before him, it may escape him. Four Months in the year it is observed to eat nothing, which is during the Winter Season; the Female is said to lay one hundred Eggs at one time, which she is as many days a hatching; and they will live to the age of one hundred years, and growing to the last. Also this River breedeth *River-Horses*, of old called *Hippopotami*; they have great Heads, wide Jaws, and armed with Tusks as white as *Ivory*; they are proportioned like a *Swine*, but as big in Body as a *Cow*; smooth Skinned, but exceeding hard. Also *River-Bulls*, about the bigness of a *Calf* of a Twelve month old, and in shape like a *Bull*. Also here are found abundance of great and small *Fishes*. And lastly, the fruitfulness of these Waters is shewed, in that the *Women* and *Cattle* which drink thereof are very fruitful, ordinarily bringing forth their Children and Young by two and three, and sometimes by four and five at a time.

There are yet many fine things might be said of the *Nile*, as its divers Names, its *Cataracts*, &c. But we have likewise omitted many things which might be said of *Egypt*, which hath been famous in Holy Writ as well as in Prophane, and which would swell into a Volume. Let us end with saying something of the fertility of the Country, what Commodities it produces and communicates to other Countries.

It is plentifully furnished with several Metals; the Ground along the *Nile* produceth abundance of *Corn*, *Rice*, *Pulse*, and other Grains, that it may well be termed the Granary of the *Turkish*, as it was formerly of the *Roman Empire*; and it feeds much *Cattle*, produceth great plenty of *Fish*, hath store of *Fowls*, yields excellent *Fruits*, *Lemons*, *Oranges*, *Citrons*, *Pomegranates*, *Figs*, *Cherries*, &c. Also *Capers*, *Olives*, *Flax*, *Sugars*, *Cassia*, *Sena*, *Oil*, *Balsom*; some *Drugs* and *Spices*, *Wax*, *Croets*, *Elephants Teeth*, *Silk*, *Cotton*, *Linnen Cloth*, with several good Manufactures; also *Hides*, besides the *Asbes* of two little Weeds growing about *Alexandria*, whereof quantity are transported to *Venice*; and without which they cannot make their *Chrystal-Glasses*. We may add, that *Incense*, *Coffee*, and other Commodities of *Arabia* and *India*, pass through this Country, to be transported into the Western parts of *Turky*.

Throughout the Countrey they have abundance of *Palm-Trees*, which may be reckoned among the Rarities of the Country, and that for several Reasons. These Trees are observed always to grow in couples, Male and Female: They both thrust forth Cods full of Seeds; but the Female is only fruitful, but not except it grows by the Male, and having his Seed

its Water exceeding nourishing.

The fertility of the Country, and its Commodities.

Its Palm-Trees, and the nature of their growing, &c.

mixt with hers, which they do not fail to do at the beginning of *March*. The Fruit it bears is known by the name of *Dates*, which in taste resemble *Figs*. The *Pith* of these Trees is White, and called the *Brains*, which are in the uppermost parts. And this is held an excellent *Sallad*, in taste much like an *Hartichoke*; of the Branches they make *Bedsteads*, *Lattices*, &c. Of the outward Husk of the Cod, *Cordage*; of the inner, *Brushes*; and of the Leaves, *Fans*, *Feathers*, *Mats*, *Baskets*, &c. This Tree is held among them to be the perfect Image of a Man, and that for these Reasons: First, because it doth not fructify, but by *Coiture*; Next, as having a *Brain* in the uppermost part, which if once corrupted (as Mans) doth perish and die: And lastly, in regard that on the top thereof grow certain Strings which resemble *Hair*; the great end of the Branches appearing like *Fingers* extended forth; and the *Dates* as *Fingers*. And so much for *Egypt*.

LIBYA

LIBYA
INTERIOR,
which doth
compre-
hend

ZAHARA, or SAARA, with its Parts or Pro-
vinces of

The Land of NEGROES,
with its Parts or King-
doms, as they lie

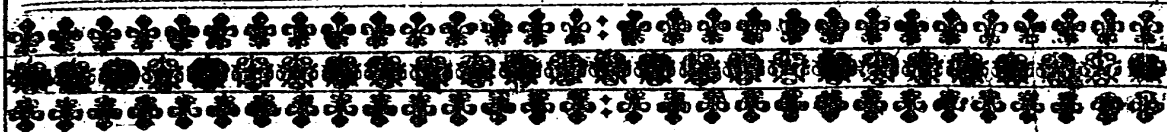
Between the Branches,
and about the Mouth
of the Niger, as

Beyond the Niger, as

GUINY, and regarding the Atlantick Ocean; with
its Parts or Kingdoms of

ZANHAGA,	Tegalla,
ZUENZIGA,	Zuensiga,
TARGA,	Zir,
LEMPTA,	Ghir,
BERDOA,	Targa,
BORNO,	Lendia,
GAOGA,	Dighir,
GUALATA,	Agades,
GENEHOA,	Berdos,
TOMBUT,	Borno,
AGADES,	Kaugh,
CANUM,	Amacen,
CASSENA,	Gaoga,
GANGARA,	Gualata,
	Angra,
	Argaya,
	Guechos,
	Wala,
	Ganar,
	Samba-Lamech,
	Tombut,
	Salla,
	Berida,
	Quegneve,
	Agades,
	Deghir,
	Mura,
	Cano,
	Taffas,
	Gerna,
	Cassina,
	Nebrins,
	Tira,
	Gugger,
	Senegonda,
	Emboule,
	Lambaya,
	Yagosa,
	Berola,
	Nabara,
	Beir,
	Catchpo,
	Boyla,
	Codari,
	Julico,
	Melli,
	Beris,
	Mandingue,
	Tocruti,
	Gago,
	Guber,
	Giber,
	Zegzeg,
	Channara,
	Zaufara,
	Keghebil,
	Bugon,
	Tima,
	Baga,
	Serppra,
	Masah,
	Valy Hamaya,
	Snawyn,
	Crou, and Growal,
	Quinamora,
	Taboi,
	Tibot Petoy,
	Wecoe,
	Moure,
	Nafou,
	St. George del Minu,
	Cormentir,
	Beris,
	Sidjenu,
	Silvete,
	Oxoo,
	Quimbumu,
	Agages Grandes,
	Bahon,
	Agagras,
	Adios,
	St. Laurencey,
	Zabandu,
	Buma,
	Boyle,
	Jagou,
	Popou,
	Jackeyn,
	Locho,
	Booko,
	Agil,
	Badi, and Cerge,
	B. Ain,
	Owerre,
	Alevoos, and Curamo,

MELEGUETTE,	On the Sea, as	Masah,
with its chief		Valy Hamaya,
Places, as they		Snawyn,
lie		Crou, and Growal,
	Within Land,	Bolombere,
	as	Quinamora,
		Taboi,
		Tibot Petoy,
		Wecoe,
		Moure,
		Nafou,
		St. George del Minu,
		Cormentir,
		Beris,
		Sidjenu,
		Silvete,
		Oxoo,
		Quimbumu,
		Agages Grandes,
		Bahon,
		Agagras,
		Adios,
		St. Laurencey,
		Zabandu,
		Buma,
		Boyle,
		Jagou,
		Popou,
		Jackeyn,
		Locho,
		Booko,
		Agil,
		Badi, and Cerge,
		B. Ain,
		Owerre,
		Alevoos, and Curamo,
		ZAHARA



ZAHARA,

That is, DESART.

Zahara, its
name, and de-
scription of
the Country.

IN our *Africa* or *Libya Interior*, we have placed *ZAHARA*, the Country of the *NEGROES* and *GUINT*. *Zahara* is an Arab name, and signifies *Desart*; and this name is taken from the quality of the Country: so the *Arabs* divide the Land into three sorts, *Cebel*, *Zahara*, and *Azgar*. *Cebel* hath only Sand, very small, without any Green. *Zahara* hath Gravel and little Stones, and but little Green. *Azgar* hath some Marshes, some Grass and little Shrubs. The Country is generally hot and dry; it hath almost no Water, except some few Wells, and those Salt: if there fall great Rains the Land is much better. But besides the leanneſs of the Soil there is sometimes such vast quantities of *Grasshoppers*, that they eat and ruin all that the Earth produceth. Through this Country the *Caravans* pass, which adds no small advantage unto it. It is so barren and ill inhabited, that a Man may travel above a week together without seeing a Tree, or scarce any Grass; as also without finding any Water, and that Water they have is drawn out of Pits, which oft-times is covered with Sand, and tastes very brackish, so that many times Men die for want of it; which knowing the defect, those Merchants which travel in this Country, carry their Water, as well as other Provisions, on their *Camels* backs.

Its People.

The People are *Bereberes* and *Africans*, likewise *Abexes* and *Arabs*; of which the first are seated in the most moist places, the others wander after their Flocks: Some have their *Cheques* or *Lords*, almost all follow *Mahometism*. Though the Air be very hot, yet it is so healthful, that from *Barbary*, the Country of the *Negroes*, and other places, Sick people come as to their last remedy.

Its division
and parts de-
scribed.

This great *Desart* is divided into seven principal Parts, of which the three Western are, *Zanhaga*, *Zuenziga*, and *Targa* or *Hair*: The four towards the East are, *Lempta*, *Berdoa*, *Gaoga*, and *Borno*. Almost every part reaches the full breadth, and all together make but the length of this *Desart*.

Zanhaga

ZANHAGA is most Westward, and touches the *Ocean*; with this *Desart* are comprehended those of *Azaoad* and *Tegazza*. This last yields Salt like Marble, which is taken from a Rock, and carried 2, 3, 4 or 500 Leagues into the Land of the *Negroes*, and serves in some places for Money, and for this they buy their Victuals. These People use it every moment, letting it melt in their Mouths, to hinder their Gums from corrupting, which often happens, either because of the heat, which continually reigns; or because their food corrupts in less than nothing. In the *Desart* of *Azaoad*, and in the way from *Dara* to *Tombut*, are to be seen two Tombs, the one of a rich Merchant, and the other of a Carrier: The Merchants Water being all gone, and ready to die for want, buys of the Carrier (who had not overmuch) one Glass full, for which he gave him 10000 *Ducats*; a poor little for so great a Sum: but what would not a man do in necessity? yet at the end the Carrier repented his bargain, for both the one and the other died for want of Water before they could get out of the *Desart*. Those near the Sea have some Trade with the *Portugals*; with whom they change their Gold of *Tibar* for divers Wares.

The

The Country or Desert of *ZUENZIGA*, under the name of which passes that of *Cogdenu*, and is more troublesome and dangerous than that of *Zanhaga*, as also more destitute of Water; and yet it hath many People, among others certain *Arabs*, feared by all their Neighbours, and particularly by the *Negroes*, whom those *Arabs* take and sell for Slaves in the Kingdom of *Fez*: But in revenge, when they fall into the hands of the *Negroes* they are cut into so many pieces, that the biggest that remains are their two Ears. Its chief places are *Zuenziga* and *Ghir*.

The Desert of *TARGA* or *HAIR* (some esteem this last the name of the Principal Place, and the other of the People) is not so dry nor troublesome as the two others. There are found many Herbs for Pastures, the Soil indifferent fruitful, and of a temperate Air. They have some Wells, whose Water is good. In the Morning there falls store of *Manna*, which they find fresh and healthful, of which they transport quantity to *Agades*, and other places. Its chief places are *Targa* and *Hair*.

LEMPITA is likewise esteemed the name of a People, and its principal place also *Digir*. This Desert is dry, and more troublesome than that of *Targa*; and its People haughty, brutish, and dangerous to them that cross it, going from *Constantina*, *Tunis*, and *Tripoli*, to the *Negroes*.

BERDOA is no less Desert than that of *Lempta*; but it hath *Dates* about those places, which are inhabited, and which are well furnished with Water. They count three little walled Cities and some Towns, the chief bearing the name of the part.

BORNO and *GOAGA* are scarce Desert. They have each their King. He of *Borno* is of the Race of *Berdoa*, and his People part Black, part White, are civil, and drive some Trade. But they have likewise their Wives and Children in common, and scarce any Religion, as formerly the *Garamantes*. The King of *Goaga* descended from a *Black Slave*, who having seized on the estate of his Master, after having bought some Horses, ran over the Neighbouring Countries, traded for some time for *Slaves* against *Horses*, whom he made mount on his, and became Master of this Estate more than 200 years ago. Part of his People are *Christians*, as those of *Egypt*; but ignorant, and almost all Shepherds. The chief places in *Borno* are, *Amasen*, *Kaughu*, and *Borno*; the two former seated in the Lake *Semegda*. The chief place of *Goaga* bears the same.

The Land of NEGROES.

THE *Negroes* are People about the River *Niger*, which hath taken its Name from these People; and these People from their Colour, and not the People from the River, as some have believed. They are divided into many Parties or Kingdoms, of which some are on this side, others beyond, and others between the Branches of the *Niger*. We have placed on this side the Kingdoms of *Gualata*, *Geneha*, *Tombut*, *Agades*, *Catum*, *Cassena*, and *Gangara*. Beyond, those of *Melby*, *Soufbs*, *Mandingue*, *Gago*, *Guber*, *Zegzeg*, and *Zanfara*.

Between the Branches, and about the Mouths of *Niger*, are a great number of People, Kingdoms, and Signories. The principal People are the *Faloffes*, between the Branches of *Sanega* and *Gambia*; the *Casanguas*, between St. *Domingo* and *Rio Grande*; and the *Biafures* beyond and along *Rio Grande*. The most famous Kingdoms of the *Faloffes* are those of *Sanega* and *Gambia*: Among the *Casanguas*, those of *Casamanse* and *Jarem*; among the *Biafures* those of *Guinafa*, *Biguba*, and *Besegue*. All these Kingdoms and People, and likewise the others which are about the *Niger*, are so little known, that some think it not worth the pains to set down their Names. We will speak only of what shall seem most remarkable.

Zuenziga.

Targa.

Lempta.

Berdoa.

Borno and Goaga.

The Land of Negroes, its Name, People, and Parts described.

GUA

Kingdom of
Gualata.

GUALATA is one of the least, having in it not above three Towns, of which *Guadia* is the chief; besides some few Villages. Fruitful in *Dates*; they are coal black; live in a mean condition, and without any form of Government or settled Laws. They have no Gentry among them, but to their power are civil to Strangers.

Kingdom of
Genthea.

GENEHOA is rich in *Grain*, *Cotton*, *Cattle*, and *Gold*; for which they have a good trade with the Merchants of *Barbary*; and by reason of the overflowing of the *Niger*, the Soil is very fertile; yet have they not many Towns: that most known is where their King resideth, who is a Vassal to the King of *Tombut*, beareth the name of the Kingdom. And here it is that their Priests, Doctors, and Merchants inhabit. The Priests and Doctors wear white Apparel, and for distinction all the rest wear black or blew *Cotton*. Its other places are, *Samba-Lamech*, *Ganar*, and *Walade*.

Kingdom of
Tombut.

TOMBUT hath quantity of *Gold*, is well watered with the *Niger*, which makes it very fruitful, especially in Grains, and it hath good Pastures, which feed many Cattle. The chief place gives name to the Kingdom, situate on a branch of the River *Niger*: It is the residence of their King, who hath a fair Palace, built of Lime and Stones, all the rest of the Houses (except one fair Church) is made of Mud, and Thatched. It is well filled with Merchants, who drive a good Trade betwixt this and *Fex*. This King, within this 100 and odd years, hath subdued and made tributary a great part of the *Negroes*, is magnificent in his Court, of the *Mahometan* Religion, keeps ordinarily 3000 Horse for his Guard, and hath marched against the *Xeriffs* of *Morocco* with 300000 Men. Its other places are *Salla* and *Berissa*, also seated on the *Niger*, *Gugneve*, *Carogoli*, and *Cassali*.

Kingdom of
Agadiz.

AGADES hath great quantities of Cattle, and are much given to grazing and looking to them, making it their livelyhood, using the Ancients custom of Tents, and removing up and down for the conveniency of fresh and good Pasture for their Cattle; and among their Moveable Towns their chief bears the name of the Kingdom in which the King resideth, who is Tributary to him of *Tombut*. Its other places are, *Degbir*, *Mayma*, and *Mura*, seated on a Lake of the *Niger*.

Kingdom of
Canum.

CANUM, besides its Cattle, hath *Grain*, *Rice*, *Cotton*, and *Fruits*; hath Springs of Running-water, as also a good River, which issueth forth many little Rivulets; it is well stored with *Wood*, is very populous; and hath several Towns; the chief being *Cano*, wherein is the Palace of their King, who is also Tributary to him of *Tombut*. This Town is environed with a Wall of Chalk-Stone, of which most of the Houses are built, and well frequented by Merchants. Its next chief place is *Germa*.

Kingdom of
Cassina.

CASSENA is craggy, barren, and very Woody; yet it yields some store of *Barley* and *Millet*. The People live very meanly, wanting many things that the other Kingdoms have plenty of; and their Houses and Towns are as poor, among which *Cassina* is the chief, next *Nebrina* and *Tirca*.

Kingdom of
Gangara.

GANGARA is rich in *Gold*, hath not many Towns, the chief whereof bears the name of the Kingdom, in which the King resideth, being also the habitation of many Merchants; and its King is very absolute, and hath a great Revenue. His Militia is in some esteem among the *Negroes*, being observed to keep in continual pay 500 Horsemen, and 7000 Men which use *Bows* and *Scimitars*. The next is *Semegonda*, seated on a branch of the *Niger*.

Kingdom of
Melly.

MELLY is a spacious and fruitful Kingdom, seated all along on a branch of the River *Niger*, which makes it very fertile in *Corn*, *Cattle*, *Dates*, *Fruits*, *Cotton*, *Wool*, &c. And by reason of the conveniency of the said River, hath a good Trade for their Commodities with other Countries. Its chief Town takes its name from the Kingdom, containing about 6000 Houses, indifferently well built, but unwall'd. It is the Seat-Royal of their King; they have likewise here a famous *Colledge*, and many *Temples*, which are well furnished with Priests and Doctors, who read the *Mahometan* Law, and under whom the youth of this Kingdom, as also those of *Tombut*, and other parts of the *Negroes* are educated. These People are esteemed the most ingenious, the wittiest, and most

most civil to Strangers of all the *Negroes*. Their King is also tributary to the King of *Tombut*.

SOUSOS hath divers petty Kingdoms, and all subject to their *Concho* or *Emperour*; among which, that of *Bena* hath seven others under it. Its quarter is Mountainous, covered with Trees, and well watered with Rivers. It hath some Towns; its chief takes its name from the Kingdom, and yields *Corn*, *Cattle*, *Fruits*, &c.

MANDINGUE begins at the River *Gambia*, and reaches near 200 Leagues up in the Land: They have quantity of *Gold*, good *Ships* of War, and *Cavalry*; and there are divers Kings or Lords in *Guiny*, which are his Tributaries.

GAGO hath store of *Gold*, *Corn*, *Rice*, *Fruits*, and *Cattle*, but no *Salt* besides what is brought from other places, and which is ordinarily as dear as *Gold*. The People are idle and ignorant, but bear so great a respect to their King, that how great soever they be, they speak to him on their knees; and when they are faulty, the King seizes on their Goods, and sells their Wives and Children to Strangers, who remain Slaves all their lives. But besides these, there is here (as well as in other parts of the *Negroes*) great Traffick for Slaves, either of certain Neighbouring people, which those of the Country can take, or of the Malefactors of the Country, or of the Children whom the Fathers or Mothers sell, when they are in need, or when they please them not. And these Slaves are bought by many people of *Africa*; but more by the *Europeans*, who transport them into the Isles of *St. Thomas*, *Cape Verd*, the *Canaries*, *Brazil*; and the *English*, to the *Barbadoes*, *Carolina*, *Jamaica*, and elsewhere for Slaves. They have many Towns and Villages, among others that of *Gago* is the chief, and is the residence of their King; as also of many Merchants, and containing about 4 or 5000 Houses, but unwall'd.

GUBER is well fenced with Mountains, doth produce *Rice* and *Pulse*; and above all, have exceeding great flocks of *Cattle*, from which they get their livelyhood. This Kingdom is very populous, and well stored with Towns, its chief bearing the name of the Kingdom, which is well inhabited by Merchants, and containing about 6000 Houses; being also the residence of their King. The People are ingenious, good Artificers, and make several rich Manufactures.

ZEGZEG and **ZANFARA** are barren, the People idle and ignorant, have some Towns, whose chief are so called; the Land yields, *Corn*, *Grass*, &c. and feeds great quantities of Horses.

The Country of the *Negroes* is esteemed as fertile as those watered with the *Nile*. It bears twice a year, and each time sufficient to furnish them with *Corn* for five whole years; which makes them not sow their Lands, but when they judge they shall have need. They keep their *Corn* in Pits and Ditches under Ground, which they call *Matamores*.

GUINEA, or GUINY.

GUINY is the Coast of *Africa*, which is found between the River *Niger* and the *Equinoctial Line*. Some give it a larger extent, some a less: There are they who begin it on this side the *Niger*, and continue it unto the Kingdom of *Congo*. We have comprehended in the Country of the *Negroes* that which is about the *Niger*; and in the Lower *Ethiopia*, that which is beyond the Gulph of *St. Thomas*: And so *Guiny* will remain between the Cape of *Serre Leon*, which will bound it on the West, and against the *Negroes*, to the River of *Camarones*, which is on the East, will separate it from the Lower *Ethiopia*. This Coast right from East to West is 7 or 800 Leagues long, and not above 100 or 150 in breadth. The form being much more long than broad, we will divide it into three principal parts, which we will call *MELEGUETE*, *GUINY*, and *BENIM*: This the most Eastward, the first the most West, and

Kingdom of
Sahon.Kingdom of
Mandingue.Kingdom of
Gago.Kingdom of
Gubir.And the Kingdoms of *Zegzeg* and *Zanfara*. The fertility of the Land of the *Negroes*.The Coast of *Guiny*, its extent and bounds.

Its parts described.

The Parts of
Billeguete and
Guiny.

The Parts of
Billeguete and
Guiny.

The Parts of
Billeguete and
Guiny.

The Ivory and
Gold Coasts,
and their
Trade.

The Part of
Billeguete.

The Kingdom
of Benim, with
its Inhabitants
described.

The Soil of
Guiny.

Its fertility
and commodi-
ties.

and the other in the middle; yet each of these three parts separated make the breadth, and the three together the length of this *Guiny*. After this *Guiny* we will speak something of what is on this side towards the *Niger*, and of some Isles which are beyond, as *St. Thomas, &c.* Under the name of *MELE-GUETE*, we comprehend that which is between the Capes of *Serre Leon* and of *Palme*: Under the particular name of *GUINY* we esteem not only that which is between the Capes of *Palme* and of *Three Points*; but likewise that which advances to the River *Volta*, and beyond, where the Kingdom of *Benim* begins, and ends not till the River *Camerones*. Of these 3 parts *Guiny* is the largest and best known, communicating its name to the rest. Its Coast, which is between the Capes of *Palme* and that of *Three Points*, is called the Coast of *Ivory*; that which is beyond the Cape of *Three Points*, the Coast of *Gold*: for the abundance of *Gold*, and *Ivory* found in the one and the other.

The Coast of *IVORY* is very commodious, and well inhabited. The *Eng-lish*, *Hutch*, *Hollanders*, and *Hanse-Towns* trade likewise in divers Ports on the same Coast, fetching thence, *Gold, Ivory, Hides, Wax, Amber-greece, &c.* On the *Gold Coast* are divers Kingdoms or Realms, as of *SABOU, FOETU, ACCARA*, and others. The Kingdom of *SABOU* is esteemed the most powerful of all, and that his Estates extend sixty odd Leagues on the Coast, and near 200 up in the Land. In 1482 the *Portugals* built on the Coast of *FOETU* the Fort of *St. George de la Mina*, and long time after the *Hollanders* that of *Nassau*, adjoining to the Town of *Moure*, on the Coast of *Sa-bou*; the one and the other to maintain their Traffick. Its other places, and which are within Land are, *Labore, Uxoo, and Quinimburn*.

MELEGUETE took its name from the abundance of *Meleguete*, here gathered of divers sorts: It is a Spice in form like *French Wheat*; some of a taste as strong and biting as *Pepper*; from which the *Portugals* receive great gain, but the *English, French, and Hollanders* bring it. The *Portugals* call it *Pimenta-del-Rabo*; the *Italians, Pepe della Goda*; *Tail Pepper*, that is, *Long Pepper*. Of their *Palm Trees* they make *Wine* as strong as the best of ours: They have likewise, *Gold, Ivory, Cotton, &c.* Its chief place is *Bugor*, on the Cape of *Sierre Leone*.

The Kingdom of *BENIM* hath more than 250 Leagues of the Coast; *Cape Formoso* dividing it into two parts: That which is on the West forms a Gulph, into the middle of which the River *Benim* disburthens it self; and more to the West that of *Lagoa*: That which is on the East extends it self on a right line, where the *Rio Real de Calabari*, and the *Rio del Rey*, disburthen themselves near to that of *Camarones*, which ends the Estate towards the East. This last part is more healthful than that of the particular *Guiny*, the Inhabitants living 100 years and more. The Land produces the same Fruits, and feeds the same Beasts with *Guiny*, and its People are more courteous to Strangers. Their principal City, so called, is esteemed the greatest and best built of any, either in *Guiny* or the Land of the *Negroes*. Its King is powerful, and very loving to his Subjects; they are all much addicted to Women, the King being said to keep about 5 or 600 Wives, with all which, twice a year he goeth out in great pomp, as well for Recreation, as to shew them to his Subjects; who according to their abilities do exceed; Those of the gentile or better sort keeping 20, 30, 40; others 50, 60, or 70; and those of the poorest rank 5, 10, or 12. Their Custom both for Men and Women, till they are married, is to go naked, and after their cloathing is only a Cloth, which is tied about their Middles, and hangs down to their knees. Its other chief places are, *Quawerre, Focko, Boni, and Bodi*.

The Soil of *Guiny* is generally fertil, the most part bearing twice a year, because they have two Summers and two Winters. They call it Winter when the Sun passes their *Zenith*, and that the Rains are continual. All the whole Country is very fertil, abounding in *Corn, Rice, Millet*, and in many sorts of *Meleguete*; in Fruits, as *Oranges, Citrons, Lemmons, Pomegranates, Dates, &c.* Also in *Gold*, both in Sand and in Ingots, in *Ivory* or *Elephants Teeth* in great

great abundance, in *Wax, Hides, Cotton, Amber-greece*; they extract *Wine* and *Oyl* from their *Palm-Trees*; and of this *Oyl*, and the *Apes* of the *Palm-Tree*, they make excellent *Soap*. They have many *Sugar-Canes*, which are scarce at all Husbanded: They have *Brazil-Wood*, better then that which cometh from *Brazil*: they have abundance of *Wood*, proper to build and Mast Ships; and *Pearls*, which they find in *Oysters*, towards the River *Des Ojstros*, that is, of *Oysters*; and of *St. Anne*, between the Branches of the *Niger*. And for these good Commodities in way of Barter, they truck or take coarse Cloth, both *Linnen* and *Wollen*; *Red Caps, Frize Mantles* and *Gowns*; *Leather Bags, Sheep-skin Gloves*; *Guns, Swords, Daggers, Belts, Knives, Hammers, Axes, heads, Salt, Great Pins, little pieces of Iron*, which they convert to several uses; *Lavers* and great *Dutch Kettles* with two handles. *Basons* of several sizes, *Platters, Broad Pans, Pishets, Pots, &c.* made for the most part of *Copper*, which are sometimes *Tinned* within. Some of which *Utensils* are made of *Tinn*, and others of *Earths*, which are here desired: Also *Looking-Glasses, Beads, Corals* and *Copper, Brass* and *Tinn Rings*, which they wear about them for their adornment. *Hors-tails* which they use to keep away the *Flies* which annoy them, as also when they Dance. And lastly, certain *Shells* which pass instead of *Money*; having here, and in many other Countries, no current *Money of Metal*, as the *Europeans* have; but make use of those *Shells*, which they hang in bundles upon strings; for which they buy in their *Markets* such things as they want.

Among their Beasts they have *Elephants*, which are said to be the biggest of all four footed Beasts: Of nature they are very gentle, docile, and tractable; they live to a great age, seldom dying till the age of 150 years. They are very serviceable, both in War and Peace, and as profitable by reason of their Tusks. It is said, That when the *Male* hath once seasoned the *Female*, he never after toucheth her. Next the *Elephants* may be reckoned the *Musk-Cats*, which with Springs they take in the Woods, when they are young, and keep them in *Hutches*, and take from them the *Musk*, which they keep in *Glasses* or *Pots*, and so vend it: And these *Cats* they vend to the *English* and other Nations at good rates. Then their *Apes, Monkeys* and *Baboons*, which are strong and lusty being taken and brought to it young, serve like men: They send them to fetch Water at the River, make them to turn meat at the Fire, serve at Table to give Drink; but they must be very watchful, otherwise they will do mischief, and eat the meat themselves; and these are much beloved by their *Women*, doing the duty of *Men*, which they are as desirous of themselves, and hating *Men*. Again, there are some of these *Monkeys* or *Apes*, which love *Men* and hate *Women*. They have variety of *Birds*, among which, they have several sorts of *Parrots* which are brought to talk. Their Fruits are excellent, as *Oranges, Lemmons, Citrons, Pomegranates, Dates, Annanas* or *Pynes*, which for smell and taste, resembleth all Fruits. *Trennelis*, a Fruit so delicate and delicious that 'tis thought it was the Fruit in *Paradise* which was forbidden *Adam* and *Eve* to eat of. *Iniamus, Battatas, Bachonens, the Palm-Tree*, and above all here is a Tree called the *Oyster Tree*, by reason of its bearing *Oysters* thrice every year; a thing, if report may be credited, is true; and if true, very strange.

The Inhabitants, especially before the coming of the *Portugals*, were rude and barbarous, living without the knowledge of a *God, Law, Religion*, or *Government*, very disingenious, and not caring for *Arts* or *Letters*. They are much addicted to *Theft*, and take it for an honor, if they can cheat or steal any thing, (though not considerable) from a *White Man*. They are very perfidious, *Lyars*, given to *Luxury*; in matter of *Justice*, they are indifferent severe, punishing oftentimes with death; but paying a fine will free them; and the place of *Judicature* is in the open *Market Place*. Their Food is gross and beastly, as is their *Habitations*, mean and beggerly. They go naked, save about their Waist they tye a piece of *Linnen*; yet very proud and stately: They are of a *Corpulent body, flat nosed, broad shouldered, white eyed* and *teeth'd, small eared, &c.* In matters of *Religion*, they are great *Idolaters*, worshipping

Commodities
here found.

Its Beasts
and their
nature.

The Elephant.

The Musk-Cat.

Monkeys, Apes,
and Baboons.

Its Birds.
Its Fruits.

Its People.

Their disposi-
tion.

Their Justice.

Their Food
and Apparel.

Their Stature

Their Religi-
on & belief.

Beasts, Birds, Hils, and indeed, every strange thing which they see; they hold there is two Gods, one doth them good, and the other hurt; and these two Gods, they say, fight together. Also they believe there is a God, which is invisible, which they say is black; yet of late they have tried many *Forms of Religion*, as *Judaism, Mahometism and Christianity*; but care not much for any. Nevertheless, some of them believe they die not, and to that end, give their dead bodies something to carry with them into the other World. They keep their *Fetissoes day*, that is, one day in seven for a day of rest, as their *Sabbath*, which is on a *Tuesday*, (a day that no other Nation in the World keeps) very strict; at which time, they offer Meat and Drink to their *Fetisso* or God, on a four square place, covered with *Wires or Fetissoes straws*, which the *Birds* (by them called *Gods Birds*) devour. During which time, the *Fetissero* sits upon a Stool with a *Pot of Drink* in his hand, using several *Ceremonies*. Amongst their *Barbarous Customs* they have one very good, and that is, when their *Daughters* are of a fitting age to marry, they put them into *Houses*, which are in the nature of *Monasteries*, where for a year they are educated by *Old Men* of good repute amongst them. And at the expiration of the said year, they are brought well habited (according to their *Custom*) and accompanied with *Musick*, and *Dancing*; and when a *Young-man* makes choise of any of them, he bargains with her *Parents*, and satisfies the *Old Man* that educated her, for his pains and charges (which is not much) and then takes her to *Wife*. The Portion being thus paid, they meet one another naked, and the *Woman* swears to be faithful to the *Man*, both at *Bed and Board*, and so the *Marriage* is concluded: But the *Man* sweareth not, being at liberty; so that upon the least offence, he may put her away, or force her to pay a Fine of so many *Potoes of Gold*: And according to the ability of a *Man*, he may buy and keep as many *Wives* as he pleaseth; among which, the eldest is subservient to the youngest. The *Man* never lieth with any of his *Wives*, neither eateth with them, but on *Tuesdays*, which is their *Sabbath*. And although the *Husband* commands, yet the *Wife* is the *Purse-bearer* until she be with *Child*, and ready to be delivered; at which time, being stark naked, and in the *Field*, among the *People*, she throweth the bag to her *Husband*, until taking a handful of *Manniget* and a spoonful of *Oyl*, she goeth abroad the next day, as well as if she had not been with *Child*, or suffered any pain; and then feasteth her Neighbors, circumciseth the *Child*; and after it hath lain sprawling upon the ground two or three daies, she taketh it, and carrieth it on her shoulders, like those which we call *Gipsies*; and when the *Child* is about four years of age, the *Mother* bringeth it to the *Father*, who teaches it to *Swim*, make *Nets, Fish and Row*, giving it nothing but what it can earn; and when it can be master of so much *Gold* as will purchase *Linnen* to make it a *Wast-cloth*, it is rich.

Their Marriage, their mode.

How they bring up their Children.

Their War.

Their Weapons.

The Riches, Revenue, State and Power of their Kings.

In *Guiny* there are several Petty Kingdoms who make War one against the other; during which War, they destroy and burn the Country, to the end that the enemy may find no succour, removing their *Goods* to a Neighboring Kingdom, with whom they have peace; and the whole Kingdom surrounds the King, for his defence and safeguard; and thus they march. Their Weapons are the *Bow and Arrows*, with which they are so expert, that they can shoot within the breadth of a *Shilling*. Also they make use of the *Poniard*, the *Dagger*, the *Shield* and *Turbant*. In which Wars, those they kill, they eat; those they take, they make *Slaves*; and such are those, that the *English, Dutch* and other Nations buy of them; and whom they subdue, they take *Hostages* from. Their Kings are not over-rich, that Revenue which they have comes from the *Customs and Tithes* upon *Goods*; as also in the two *Ounces of Gold* paid by every Man that lieth with another's *Wife*: Likewise, in *Fines* levied for *Theft* for their ransom; and lastly, in the *Sixpenny* forfeitures for bringing their *Weapons* within any of their Cities: Neither do they live in great pomp and grandure; a poor Cottage with us, being with them a Princes Palace. Yet they are had in such reverence, that none cometh to speak with them (though of their *Nobility and Gentry*) but must crawl upon the hands and knees,

knees, and so deliver their business unto them. But the *White Men* are had in so much respect (though never so poor) that they fit cheek by jowl by their Kings. Upon the Coronation day, as also upon the Quarter days, when the Kings receive their Customs, they make a magnificent Feast which lasteth for two or three days; at which times they have all the varieties in their way as the Countrey will afford; and many of them are held very powerful.

And here, on this Coast of *Guiny*, the *Dutch* have been great Traders, having several Holds and Factories, but of late in *Anno 1663 and 64*, the *English* have had many struglings with the *Dutch*, whom they have pretty well subdued; and have now settled their several Factories, and are incorporated into a Society at *London*, called the *Royal African Company*, who have many Factories and settlements, driving a very considerable Trade, to the great benefit of the Nation.

Isles of St. THOMAS, &c.

Between *Guiny* and the *Lower Aethiopia*, is a Guph, where are the Isles of *St. THOMAS*, *Princes Island*, *Fernand Poo*, *Annobon* or *Bon Anne*; and farther in the *Great Sea*, *St. Matthew*, the *Ascention*, *St. Helena*, &c. These Isles have their names from the day whereon they were discovered: That of the *Prince*, because its Revenue was designed for the Prince of *Portugal*; that of *Fernand Poo*, from him that discovered it.

But of all these Islands that of *St. THOMAS* is by much the greatest, and the best: Its form is almost round, it is thirty, others say forty; others, and with more apparent truth 60000 Paces Diameter; which are 180000 Paces, or 65 Leagues circuit, seated under the *Aequator*; and by reason of the excessive heats which are there predominant: The Air is found very prejudicial and unhealthful to strangers, especially to the *Europeans*, who scarce ever reach to the age of fifty years, and the Women much less: Yet the Natives of the Countrey live commonly 100 years, and without sickness. They have no Rain but only in *March and September*, yet by reason of the Dews, which at all other times of the year falls, the Earth is well moistned, so that it brings forth all sorts of *Fruits, Roots and Pot-Herbs*; but their principal riches is their *Sugars*, of which, they have sometimes exported 150000 *Arrobes*, each *Arrobe* being 32 l. weight, which is five Millions of pounds yearly: Also *Ginger*, &c. there is carried them in exchange for their *Commodities, Wines, Oyls, Cheese, Stuffs, Beads, Drinking-glasses, Corn-Flower*, and little white Shells which serve for Money in *Aethiopia*, as in *Guiny*, &c. They Trade in the Neighbouring Coasts, where are the Rivers of *Barca, Campo, St. Benito, St. Juan*, and the Isle of *Corisco*: Those *Grains and Vines* which they would have sown and Planted, have not thriven, the Earth being too fat. They make their Bread of divers Roots; have their Wood from *Palm-Trees*: They feed much Fowl, have abundance of several sorts of Fish, both great and small, among others, *Whales*. They have also great store of four-footed Beasts, among others, their *Hogs* bear the Bell; which being fed with *Sugar-Canes*, after the Juyce is drawn out, grow fat, and become so excellent, that their *Pullain* is accounted for no value to them, even for sick people. The middle of the Isle is filled with Mountains, which are loaden with a great number of Trees, which are always covered with Clouds, which so moisten the Trees, that from them falls so much fresh water, as makes many little streams, which waters all parts of the Island. The *Portugals* have built the City *Pavaosan*, containing about 2 or 800 Houses, and some Forts, to defend the Port: They have erected a Bishoprick, and do allow of no Religion, but the Christian. This Town is well frequented by *Portugal Merchants*, who trade in the Commodities afore-said. The Inhabitants are *Negroes*, and very black.

The Island of St. Thomas described.

Princes Island.

The Island of
Annohon.The Isle of St.
Helena.Other Isles not
inhabited.Nubia and its
bounds.Its length and
breadth.
Its chief placesThe City of
Gorham.

PRINCES ISLAND hath a little City, and the Inhabitants live conveniently; the Isle being fruitful, yielding *Fruits, Sugar, some Ginger, &c.* Once taken by the *Hollanders*, who for some reasons soon abandoned it.

The Island of *ANNOBON* yields *Sugars, Cottons, Cattle*, and excellent Fruits especially large *Oranges*. In this Isle there is a Town of 100 or 120 Houses of Blacks, who are governed by some few *Portugals*.

The Island of *St. HELENA* was first discovered by the *Portugals* upon the 21 of *May*; on which day, is celebrated the memory of *St. Helena*, the Mother of *Constantine* the Great; from whom it took its name. This Isle is so fertile, that it is observed no place in all *Europe* yields the like plenty; for with manuring and cultivating the Earth, it produceth excellent Fruits, which are here found all the year: It hath great store of *Barbary Hens, Feasants, Partridges, Pigeons, Quails, Peacocks*, with several sorts of small Birds in great plenty; it hath also *Goats, Swine, &c.* Yet this Isle is not inhabited, but serves for the *English, Portugals, Spaniards* and *Hollanders*, to refresh themselves in going, but for the most part in returning from the *Indies*; it being sufficient to furnish Ships with Provision for their Voyage; here being *Salt* to preserve the Meat from stinking; and besides, the Air is so healthful, that they often leave their sick people there, who in a short time are restored to perfect health; and by the next Ships that put in there, are taken in again. During which time, they find wherewithal to feed them: But some years ago, the *Hollanders* ruined all that was good, only to spite the *Spaniards*, who afterwards did the same, that the *English, Hollanders, &c.* might have no profit by it. This Island is well furnished with good Waters, which alone is a great refreshment to Ships.

The Islands of *FERNAND POO, St. MATTHEWS*, and *ASCENSION*, are also not inhabited, and of no great account, nor much known; which we shall pass by, saying only, that they have some *Fowls, Wild Beasts*, and their Seas yield *Fishes*.

N U B I A.

NUBIA is bounded on the North, West and South, almost every where with Mountains; which separate it from the Desert of *Barca* and *Egypt* on the North; from *Suara* and the *Negroes*, on the West; and from the *Abyssins*, on the South; the rest towards the East, is bounded in part by the *Nile* which separates it from the Isle of *Gueguere*; in part by an Imaginary Line, which separates it from divers Provinces; of which, some belong to the *Turks*; who hold all that is on the *Red Sea*, which they have taken from the *Abyssins*.

NUBIA thus taken, makes a long square, whose length from South-West, to North-East, is about 400 Leagues; and its breadth from South-East, to North-West, almost every where, 200 Leagues. The chief Cities of *Nubia*, are, *Cusa, Gualwa, Dancala, Jalac* and *Sula*, according to the *Arab* of *Nubia*: Moreover and in the same Author, I find that *Tamalma, Zagbara, Mathan, Angimi, Nuabia, Tagua*, and some others fall likewise in *Nubia*; and by some Authors *Gorham*, which some would put among the *Negroes*, should be likewise in *Nubia*, because it is on the *Nile*: There where it can have no communication with the *Negroes*, who ought to be upon, and about the *Niger*. Likewise *Damocha*, towards the *Negroes*, and *Bugia* towards *Egypt*, ought to be esteemed in *Nubia*.

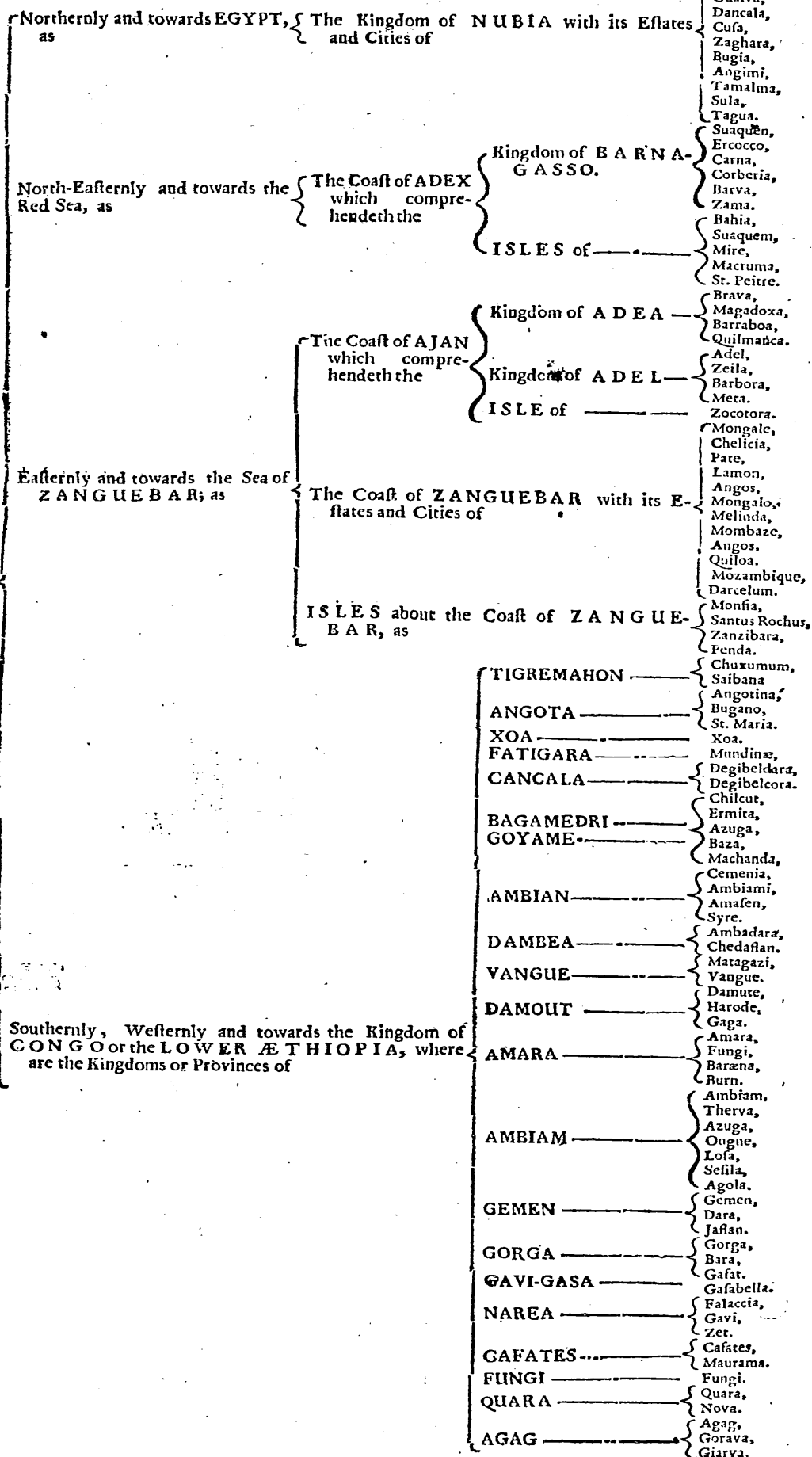
Gorham is on the *Nile*, and on the Coast of the Isle *Gueguere*. *Sanutus* makes a Kingdom, a Desert, and a People of this name, and extends them almost all the length of the Isle *Gueguere*; not making any mention of the City of this name, nor *John Leon* of *Africa*, nor the *Arab* of *Nubia*, nor *Vincent Blanck*, who saith, he hath been in these quarters, and speaks only of the Desert of *Gorham*. Other Authors make mention of this City, and describe it on the *Nile*. *Sanutus* saith, that there are found *Emeralds* in those Mountains, which bound *Gorham* on the South.

Except

Except only *Gorham*, the *Arab* of *Nubia* observes the distances between all the other Cities which we have taken notice of; and saith, that *Tamalma* hath many Inhabitants, no Walls; makes little account of *Mathan* and *Angimi*: Moreover, he esteems *Mathan* the Residence of the King of *Canem*, who holds here many Cities; makes *Zagbara* better, and saith, it hath some Trade, *Tagua* and *Nubia* more, from which last the Region and People took their names. *John Leon* and *Sanutus* after him, esteems *Dancala* or *Dangala*, the chief of the Kingdom, seated on the *Nile*, and that it hath about 10000 Families. And he saith, its Houses are built with Chalk, and covered with Laths or Boards: The Inhabitants civil and rich, driving a good Trade through all *Egypt*, even to *Cairo*; whither they carry *Arms, Cloths, Civet, Sanders* and *Ivory*. They have a certain *Poyson* worth 100 *Ducats* an *Ounce*, which they sell only to strangers, which promise not to use it in the Countrey. And also *Bugia* seated on the *Nile*, a City of some account and Trade; as is *Jalac, Gualwa* and *Cusa*, also seated on the *Nile*.

The

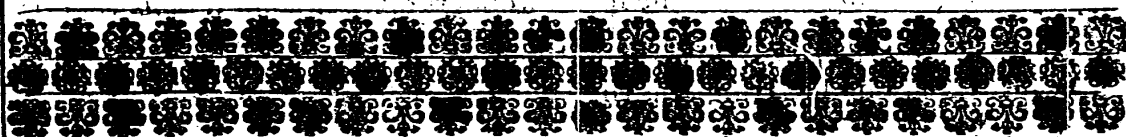
The Empire of the ABISINES or the HIGHER ÆTHIOPIA, wherein are comprehended divers Kingdoms, Countreys, Coasts, Isles, &c. which may be considered as they lye



A MAP OF THE HIGHER AND LOWER
ETHIOPIA COMPREHENDING SEVERAL
KINGDOMS, &c. IN EACH, TO WIT IN
THE EMPIRE OF THE ABISSINIES,
THE COAST OF ZANGUEBAR, ABEX,
AND ATAN, WITH THE KINGDOMS
OF NUBIA, AND BIAFARA, &c. IN THE
LOWER ETHIOPIA THE KINGDOM
OF CONGO, Y EMPIRE OF MONOMOTAP,
AND MONOEMUCY, Y COAST AND LANDS
OF CAFRES, AND OF THIS SIDE CAPE
NEGRES, with the Isles of Madagascar &c.
By Monsieur Saylor Geographer to the
French King



Francis Lamb Sculp



T H E
E M P I R E
O F T H E
A B Y S S I N S,
Or, T H E
Higher Æthiopia.

A *BYSSIN*, or the Empire of the *ABYSSINIS*, is commonly called the Higher and Great *ÆTHIOPIA*; because it makes the greatest and better part of the one, and the other *Æthiopia*; and is the greatest and most considerable Estate of all *Africa*, under one name. It extends itself on this side, and beyond the *Equinoctial Line*; from the Mountains of the *Moon*, and the Springs of the *Nile*, even near unto *Egypt*; and from the Kingdoms, and Estates of *Congo*, and the *Negroes*, unto the Coasts of *Zanguebar*, *Ajan* and *Habex*. Its greatest length from South to North, is 800 Leagues. Its breadth from West to East, 4, 5 and sometimes 600, and in Circuit about 2500.

Empire of the
Abissins, its ex-
tent, length, &
breadth.

Some divide this great Estate into many Kingdoms and Provinces, as are set down in the *Geographical Table* of the Higher *Æthiopia*; we shall observe the most known.

Its parts.

BARNAGASSO signifies King of the *Sea*, because formerly all this Kingdom or Government held all the Coast of the *Red Sea*, from *Egypt* unto the Kingdom of *Dancalia*; which is 250 Leagues; At present the *Turks* hold this Coast, where are *Suaquen*, *Mezzua*, *Arquico* which we will describe with *Zanguebar*, under the name of the Coast of *Habex*. *Barva* or *Daburova* is esteemed the chief of *Barnagasso*; after which some put *Canfila*, *Daffila*, and *Emacen*: others esteem *Canfila* and *Daffila* Provinces or Governments, and *Emacen* a City of the Government of *Daffila*, 20 Leagues from *Barva*; 50 from *Suaquen*. *Ghaxumo* is the chief of *Tigre*; a fair City, and according to the common opinion, the Ordinary Residence of the Queen of *Sheba* or *Saba*, that came to see *Solomon*. Both the City and Quarter of *Sabain*, not far from *Ghaxumo*, seem to retain the name. There are every where, hereabouts, found a great many fair Churches: *Angotine* is a City in the Kingdom of *Angota*, and here they use *Salt*, or little pieces of *Iron* instead of *Money*.

Kingdom of
Barnagasso de-
scribed.

The Kingdom of *AMARA* is famous, by reason of its Mountain, where the Children, and nearest of Kinred to the *Grand Negus* are guarded: This Mountain is very high, of a great circuit, and whose approaches are very difficult, being craggy on all sides, and easie to defend; which made this use be made of it, to keep those which may cause any commotion in the Estate. The top of the

Kingdom of
Amara describ-
ed.

the Mountain is formed into a great Plain, where there are fair *Buildings*, many *Cisterns*, a rich *Monastery*, &c. Some speak wonders of this Mountain, and that the *Grand Negus* being deceased, they take thence him who is the true interior, if he be capable to govern the Estate, if not the second or third, *Order*. Others say that there are no such things as they put here, neither *Monastery*, *Literary*, *Gold*, *Precious Stones*, &c.

BAGAMEDRI is subdivided into Provinces, like to *Tigre*, hath a greater extent, and should be better, lying along the *Nile*. The Prince resides often at *Dambea*, which is beyond the *Nile*, as well as *Damout*. Some place the Springs of the *Nile* in *Goyame*, others in *Cafates*. The one and the other Kingdom being about the Lake of *Zaire*. *Goyame* where this Lake reduces it self into a River, which is the *Nile*: *Cafates* on one of the principal Rivers of those that fall into the Lake; which apparently should be called the *Nile*. *Nareea* is between the Lake of *Zaire* and *Zaffan*; which are two Lakes, from whence descend the principal Rivers which make the *Nile*.

The Air of *Abissin* is very temperate considering its situation: *Tigremabon* particularly is esteemed so, by reason of the Northern Winds, which refresh it. All the Country is in Plains, except some Mountains, which are especially towards its bounds. The Soil is generally good, fruitful in *Grains* and *Pulse*, of which, it hath excellent, not known to us; they have few *Vines*, as also few *Herbs*, the *Grasshoppers* much annoying them. The Land feeds many tame and wild *Beasts*; and much *Fowl*, among others an infinite number of *Turtles*. Their *Rivers* have *Crocodiles* and *River-Horses*, which they call *Gomaras*; it is a hardy Fish, and will assault men in the Water. It hath much *Metals*, as *Gold*, *Silver*, *Lead*, *Tin*; and the Mountains so full of *Sulphur*, that they may afford wherewith to make *Salt-peter* more than any Country in the World, *Tigremabon* hath *Mines* of *Gold*, *Silver*, *Iron*, *Lead*, *Copper* and *Sulphur*: *Damout* hath more *Gold*, than all the rest: *Bagamedri* and *Goyame* hath likewise *Gold*.

The *Inhabitants* are generally black; some more, some less; they are (for the most part) of a good stature, flat nosed, woolly haired, of a nimble spirit, and very jovial. They have scarce any thing of Literature, neither do they much desire to attain to any. They *Covyn* neither *Gold* nor *Silver*, but receive it by weight. Some Authors make this Prince so rich, that there is scarce any in the World hath so much present *Gold* in his *Coffers*. *Sanutus* saith, that he once offered to the Kings of *Portugal* a Million of *Drams* of *Gold*, and as many men to exterminate the *Infidels*. And *Queen Helena* writing to *Emanuel* of *Portugal*, and speaking for her Grand-child *David*, saith, that if the King of *Portugal* would furnish them with 1000 *Vessels* of *War* and *People* fit for the *Sea*, that she would on her part, furnish them with all things necessary for the *War*, and give them 200 Millions of *Gold*; and that she had *Men*, *Gold* and *Provisions*, in such great number and plenty, as there were *Sands* in the *Sea*, or *Stars* in the *Firmament*.

Zaara, King of *Æthiopia*, led against *Asa*, King of *Judah*, 90000 *Foot*, and 10000 *Horse*; which are 100000 *Men*. *Pliny* esteems the Isle of *Meroes* alone have 250000 *Men* fit to bear Arms; and 400000 *Artisans*. At present, the *Grand Negus* is held able to raise a Million of *Men*; and *Barnagas* alone to furnish 200000 *Foot*, and 20000 *Horse*. The Prince is always in the Field, and 5 or 6000 *Tents* attending on him, where are are *Churches*, *Hospitals*, *Shops*, *Taverns*, &c. which furnished with all things necessary for himself, and his *Train*.

There are scarce any *Fortresses* in the Country, except where Mountains of themselves make them. The *Neighbors* to this Estate, are the *Turks*, who hold all the Coast of *Haber* on the *Red Sea*, the King of *Adel*, and some others, on the Coasts of *Ajan* and *Zanguebar*; the *Monomotapa*, or the *Monomugi*, towards the Mountains of the *Moon*; the *Congo*, or some Estates neighboring on *Congo*, and the *Negroes* towards the West; some Kings of *Nubia*, towards the North. Except the *Turks*, the *Abissins* having no *Civil War*, can easily reduce the greatest part of them to reason, or at least, hinder them from molesting him.

ZAN-

ZANGUEBAR.

Under the name of *ZANGUEBAR*, I comprehend all the Coasts of the Higher *Æthiopia*: And these Coasts are on the *Æthiopian Ocean*; and the *Red Sea* or Gulph of *Arabia*. I subdivide them into three parts; the Coast of *Zanguebar*; the Coast of *Ajan*; and the Coast of *Abex*. The Coast of *Zanguebar* extends it self from the *Cafres* to under the *Equator*, for the space of 5 or 600 Leagues: That of *Ajan* is between the *Equator* and the *Streight* of *Babel-Mandel*, likewise 600 Leagues: The Coast of *Abex* advances from that *Streight* to *Egypt*, and hath not above 4000 Leagues. The first part was called by the Ancients *Barbaria Regio*, the second *Azania Regio*, and the last *Troglodittica Regio*.

The particular Coast of *Zanguebar* towards the East regards some Isles, among which that of *Zanguebar*, which hath communicated its name to the Coast, and then those of *Penda* and *Monfia* are the best known: *Massy* makes mention here of the Isle and City of *Querimba*, and *Texera* of *Amsa*; the one and the other possibly, answer to some of those which *Sanutus* calls *St. Roca* and *Monfia*, which (he saith) are four Islands, two great and two small.

Penda and *Zanguebar* are the greatest, and according to the form *Sanutus* gives them, are each of 100 Leagues circuit; *Monfia* 50, and the others much less. All, and particularly *Zanguebar*, produceth quantity of *Grains*, as *Rice*, *Millet*, &c. quantity of *Fruits*, as *Citrons*, *Oranges*, &c. and many *Sugar Canes*, which they know not how to refine; nor want they *Fountains* of fresh Water. *Anixa* and *Querimba* hath *Manna*, but not so much esteemed as that of other places.

On the Coast are the Estates or Kingdoms of *Mongale*, on one of the branches of *Cuama*, *Angos* or *Angouche*, on another Branch, or on another River of the same name, *Mozambique* Isle and City on the Coast, as likewise *Quiloa* and *Mombaze*. *Melinda* is no Isle, but on the Coast: so are *Lamon*, *Pate*, &c. *Mongalo* and *Angos* are little considerable; their *Inhabitants* black, *Mahometans* and *Pagans*; they traffick in *Gold*, *Ivory*, *Calicoes*, and *Silk*. The Isle and City of *Mozambique* is on that Coast of *Africa* which regards the Isle of *Madagascar* towards the East, and just between the Capes of *Good Hope* and *Guardafuy*, near 1000 Leagues from the one and the other, some account is made of this City and its Port; for the goodness and depth of its Port, though small; but of a very important retreat for the Vessels of *Portugal*, after they have passed the Cape of *Good Hope*, where oft-times the Heat, or the working or motion of the Ship distempers many *Mens*, who refresh themselves here, there being a very good Hospital, and a Magazine always furnished with what ever is needful, to finish their Voyage to the East Indies; this Port serving them going to the *Indies*, as the Isle of *Sanctæ Helena* doth in their return. The whole Isle is not above a League and half in circuit. Its City is not so beautiful as many have believed it, but of a good Trade, wealthy and well frequented by the *Portugals*. Its Castle is good, since it hath sustained divers Assaults of the *Hollanders*. The Soil is dry, hath none, or very little Fresh-water; but the great number of *Fruits*, as *Cocos*, *Oranges*, *Citrons*, as others common to the *Indies*; and the quantity of *Cattle*, as *Oxen*, *Sheep*, *Goats*, *Hogs*, &c. which are found here; recompence these Inconveniences. Their *Figs* are long and large, being excellent and healthful. The Tree sprouts, and dies every year; it shoots forth but one Branch, where many *Figs* ripen one after another, so that they are found to continue almost all the year: the Leaves are so great, that two will cover a person of a moderate stature: dying, it leaves a Root, which shoots forth another *Fig-Tree* the year after.

D d d

Their

Kingdom of Bagamedri with its Provinces &c. described.

The Air fertility, commodities, &c. of the Abissin.

Its People.

Its Kings very rich and powerful.

Zanguebar is mentioned in the Coast of Parts, and their Situation.

Zanguebar.

Penda.

Isle and City of Mozambique described.

Angos &c.

The Higher ÆTHIOPIA.

The Higher ÆTHIOPIA.

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Kingdom of Quiloa, its chief places, &c.

Its People.

The Isle and City of Mombaze.

The Kingdom of Melinda described.

Its People.

Their *Swines-flesh* is so healthful, that Physicians order it for Sick people. Their *Pullain* are good and delicate, though their *Feathers, Flesh, Blood,* and *Bones,* are very black, and if boiled in Water as black as *Ink.* Here they are said to have *Sheep,* whose Tails weigh about 25 pound weight.

QUILOA is 150 Leagues, or little more from *Mozambique,* in a straight line, and near 250 by Sea: It hath two Cities, the Old and the new; the Old on the main Land, the New in an Island, divided from it by a small Channel: This last is much the fairest; its Houses high, magnificent, and well furnished; accompanied with Gardens, where they gather excellent Fruits throughout the whole year. The Kings of *Quiloa* once commanded all the Coast into *Mozambique* and *Sofala;* but this Estate hath received a great change since the coming of the *Portugals* into these quarters. Its Inhabitants are yet rich, and have a great traffick for *Gold,* which they bring from the Main Land, where there is near as much as on the Coast of *Sofala;* as also *Silver, Ambergrece, Pearls* and *Musk:* They are part black, part white, these coming from *Arabia,* and are *Mahometans;* the others of the Natives are partly *Adapters,* both the one and the other go clad after the *Arab* or *Turkish* manner; the richest wearing Cloaths of *Gold* and *Silver, Silks, fine Calicoes,* and *Scarlet,* enriching the Guards of their *Swords* and *Daggers* with fair *Pearls* and *Precious Stones,* as the Women do their *Ear-Pendants* and *Bracelets.* They are very comely, of a civil behaviour, neat in their Houses, and love to go in rich Apparel. Here the People are observed to use a strange custom to those of the Female Sex, which is not used by any other Nation or People, save themselves; which is that they sow up the Privy-parts of the Female Children, only leaving a small vent for the issuing forth of their Urine. And thus sowed, they keep them carefully at home until they be married; and those that are by their Husbands found not to have this sign of their perpetual Virginity, are sent to their Parents with all kind of ignominy, and by their Parents are as disgracefully received. The Country, though unhealthful to the *Europeans,* ought to be esteemed good, since the Inhabitants are rich, the Soil fruitful in *Grains* and *Fruits,* feeding many *Beasts* and *Fowl.* Its Forests full of Game, and its Neighbouring Sea full of excellent Fish.

MOMZAMBE is 150 Leagues from *Quiloa,* seated on a little Hill, and an in Island, at the bottom of a Gulph, where great Ships may ride safe at Anchor. This City was formerly great, being about a League in circuit, encompassed with a strong Wall, and fortified with a good Castle; well Peopled, of a good Trade; its Streets in good order, and its Houses high, and well built with *Stone* and *Chalk,* appearing almost all towards the Sea. It was found out when *Vasco de Gama* was in the *Indies,* and afterwards taken and retaken divers times by the *Portugals,* who keep a Fort by reason of the goodness of the Haven, and to maintain their trade. The Isle of *Mombaze* is but small.

MELINDA is another Kingdom, but of a small extent; yet made considerable by the good intelligence it hath always preserved with the *Portugals.* Since *Vasco de Gama* passed there the first time in 1489, until this present, which hath stood it in good stead; the Neighbouring States having been taken, pillaged, and burned divers times. This kept entire, maintaining its Trade with the *Portugals,* and with the East: Its chief City bears the name of the Kingdom, seated in a fruitful and delightful Soil, yielding great plenty of *Rice, Millet, Flesh,* good store of Fruits, as *Lemons, Citrons, Oranges,* &c. But not well furnished with *Corn,* the greatest part whereof is brought out of *Cambaya,* a Province in *India.* This City is fair, well Walled, and the Houses built after the *Moorish* manner, with many Windows and Terraces. The Inhabitants on the Sea Coasts are of the *Arabian* breed, and of the same Religion. Those of the Inlands, which are the Original Natives, are for the most part *Heathens,* and of an *Olive colour,* but inclining to *whiteness,* and their Women of a very *white Complexion,* as in other places. They are said to be more civil in their Habit, Course of life, and entertainment in their Houses,

Houses, than the rest of this Country; and great Friends to the *Portugals,* who return the like kind usage to them. This Kingdom of *Melinda* is not distant from *Mombaza* above 30 Leagues by Land, and 60 by Sea; whose People are of the same nature and disposition with those of *Melinda.*

The Estates of *LAMONPATE*, and *CHELICIA,* and likewise some others, are under the Government of *Melinda.* *Panebaxira,* King of *Lamon,* and Brother to the King of *Chelicia,* surprized in 1589, *Roch Brito,* Governour of *Melinda,* and some other *Portugals,* whom they sold to the *Turks.* The Admiral *Thomas Sousa Cotinbo* assaulted them, took, and cut off the Head of the King of *Lamon,* quartered the others, and hung them up in divers places to serve for example. These Kings are almost all *Mahometans;* yet here are found some few *Christians* which inhabit among them.

We have observed on the Coast of *Zanguebar* but five or six different Estates or Kingdoms; there are some others, but of lesser note, and all Tributary, or in good Intelligence, and trading with the *Portugals.*

The Coast of *AFAN* contains the Republick of *BRAVA,* which *Sanutus* calls *Barraboa;* then the Kingdoms of *MAGADOXA, ADEA,* and *ADELL:* some of their People on the Coast are White. *BRAVA* is well built, an indifferent Mart; rich, and pays Tribute to the *Portugals.* It is the only Republick at present in *Africa,* being governed by 12 Councillors or Statesmen. *MAGADOXA* is its chief City, and hath sometimes been so powerful, that it ruled over all this Coast; it is situate in a delightful and fruitful Soil, and neighboured by a safe and large Haven, which is much frequented by the *Portugals,* and is very rich, affording *Gold, Honey, Wax,* and above all *Abyssin* Slaves, which by the *Portugals* are held in great value; for which they bring them in exchange the *Silks, Spices, Drugs,* &c. of *India.*

ADEA extends it self but little towards the Sea: The Country is fertile in Grains, as *Wheat, Barley, Rice,* &c. It is well shaded with Woods and large Forests, which are plentifully furnished both with Fruits and Cattle, besides a great increase of *Horses.* The Inhabitants are of the *Mahometan* Religion, and follow the *Arabians* in many of their Customs, from whom they were defended, keeping much of their Language, and in their Habit naked, save only from the middle downwards. Of Complexion, for the most part of an *Olive colour,* and well proportioned; not very expert in Arms, except in poysoned Arrows. Its other chief places are *Barraboa* and *Quilmanca,* seated on the Sea, which is called the Coast of *Ajan,* as is *Magadoxo.*

ADELL within these few years is become the most powerful of all these Kingdoms: Its Estates extending both on the *Arabian* Gulph or *Red Sea;* and on the Great Ocean, stretching 200 Leagues on each side; Cape *Guardafuy* ending both the one and the other towards the East, regards in the Sea the Isle of *Zocotora,* famous for the quantity and goodness of the *Aloes* here gathered, which they call *Zocotorin;* about which are several other Isles, but not so considerable, being small, and many not inhabited. The *Arab* of *Nubia* would make us believe, that *Alexander* the Great was in this Island, drove thence the Inhabitants, and planted *Greeks* the better to manage the *Aloes,* which *Aristotle* had so much prized to him. Its chief City takes its name from the Kingdom; its others places of most note are, 1. *Zeila,* of old, *Avalis,* and its Gulph *Avalatis Sinus,* is one of the best places of the Kingdom of *Adell,* though about the City there wants Water; yet the Country farther off furnishes *Wheat, Barley, Millet, Oil of Sesamum, Honey, Wax, Fruits, Gold, Ivory,* and *Incense.* They sell to the *Turks* and *Arabs* abundance of *Abyssin* Slaves, which they take in War; and in exchange receive *Arms, Horses,* &c. This *Zeila* is a noted Port Town, well frequented with Merchants, by reason of the variety of good Commodities that it yields. Once of great beauty and esteem, till in the year 1516 it was sacked and burned by the *Portugals;* before which it was esteemed the most remarkable Empire of all *Æthiopia* for the *Indian* Trade. 2. *Barbora,* and 3. *Meta,* are two of the most noted Sea-Port Towns in all *Adell,* both under the *Turks* Jurisdiction. The first is seated on the same Sea Coast, as *Zeila* is, well frequented

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by

The Coast of Ajan described.

Its People.

Estates of Lamon, Pate, and Chelicia.

by Merchants, high to a lofty Promontory, which they call Mount *Tellez*: And the last is seated near the Cape of *Guardafuy*. The People inhabiting on the Sea Coasts are descended from the *Arabs*, and of the *Mahometan* Religion; but those towards the Inland Countries, of the old *Æthiopic* Race, and wholly *Gentiles*.

The Coast of *ABEX* hath for its principal places, *Aquico*, of old *Magnum Littus*, *Maczuma* Isle, *Macaria* Insula, and *Suaquem* *Ptolomais Feraurum*. The *Turk* hath a *Bassa* at *Suaquem*, and some say another at *Maczuma* or *Aquico*. *Suaquem* is in the midst of the Coast of *Africa*, which lies on the *Red Sea* or *Arabian Gulph*, distant from *Sues* in *Egypt*, which ends this Gulph, 250 and odd Leagues; and from *Babel-Mandel*, which begins it, 260, or little more: So the Authority of this *Bassa* extend almost quite over this Sea. The Isle of *Maczuma* hath good Pastures, feeds much Cattle: *Aquico* is almost opposite to *Maczuma*, and both have commodious Havens. Its other chief places are, *Canfila*, *Daffila*, *Emacen*, *Barba*, *Zama*, *Corberia*, and *Carna*. About this Coast of *Abex* are several other Isles, as *Babia de Cabras*, *Suaquem*, *Mire*, *Meger*, *Ballaccia*, *Maczua*, *St. Peitre*, with several others not worth the naming.

All this Coast of *Abex* hath been under the Government of *Bernagasso* in *Abyssin*, and belonged not to the *Turk* till within this hundred years. A Country dry, untilld, but of some Trade: the People fierce, retaining much of their ancient Barbarism. They Fish *Coral* near the Isle of *Suaquem* and *Aquico*; they frequently pass from *Suaquem* to *Ziden*, in *Arabia*, which serves for a Port to *Mecca*, and is about 100 Leagues over. This is the Traject which the *Arab* of *Nubia* describes between *Adhab* and *Giorda*, which answer to *Suaquem* and *Ziden*.

The Coast of
Abex, with its
chief places
and Isles.

The

The Em-
pire of the
ABYS-
SINS;
or the
LOWER
ÆTHIO-
PIA; with
its Empires,
Kingdoms,
Land, &c.
which may
be divided
into (or com-
prehended under)
three Parts,
or Heads;
and then

The First shall
contain

The Kingdom of CONGO,
with its Kingdoms or Provinces
of

LOANGA,

PANGO,

SUNDA,

SONGO,

BAMBA,

PEMBA,

BATTA,

ANGOLA,

GIAQUES,

MALEMBA,

BUTUA,

MONOMOTAPA, particularly so
called,

MATAMAN,

Coast of CAFRES, particularly
so called,

CHICANGA,

QUITEVA,

ZEFALAN,

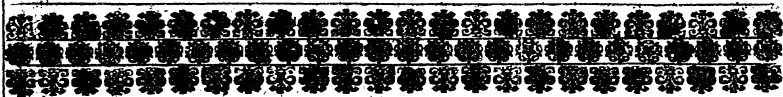
Loango,
Sette,
Majumba,
Quinvi,
Quilongo,
Sefinga,
Kaye,
Katte,
Pango,
Cundi Funquesi,
Angote,
Chicaco de Lula,
Sunda,
Beteque,
Quincallo,
Sonho,
Bommo,
Matinga,
Cafais,
Melemba,
Calinde,
Palmarinho,
Mombala,
Quivala,
Ramba,
Mafula,
Lengo,
Loanda St. Pavo,
Fort Mola,
Morole,
Bengo,
Azile,
St. Salvador,
Pemba,
Tinda,
Simba,
Lamba,
Batta,
Agimiba,
Gongou,
Engaze,
Mafegam,
Benguela,
Quicongo,
Manikimombo,
Manikilondo,
Gunze,
Mapongo,
Embacoca,
Zaire,
Dagay,
Ellice,
Meri,
Debian,
Bana,
Carna,
Zet,
Dobdof,
Augota,
Calburas,
Bafat,
Quidcu,
Degme,
Hagala,
Gierd,
Amara,
Matagali,
Bera,
Atubeta,
Gallita,
Moumpotapa,
Zuggi,
Tiallo,
Zimboro,
Jourd,
Garma,
Mofita,
Vigiti Magna,
Agga,
Lemgoa,
Catur,
Beif,
Bagametro,
Zembre,
Anga dos Negros,
Cabo Negro,
Doileus portus,
Cape St. Anthony,
Cape St. Lucia,
St. Martin Bay,
Cape of Good Hope,
Bicarius Portus,
St. Nicholas,
Zimbaso,
Deje,
Cuama,
Zefalan.

The Second
shall contain

The Empire of MONOMOTAPA,
with its Kingdoms or Parts of

The Third
shall contain

The Land and Coast of CAFRES,
which encompasseth the Em-
pire of MONOMOTAPA,
with its Parts of



THE EMPIRE OF THE ABYSSIN S,

Or, THE

Lower Æthiopia.

The Lower
Æthiopia, and
the Power and
Riches of its
Emperours.

THE Empire of the *ABYSSIN S*, *Heylin* makes to be the Dominions or Empire of *Prester John*, and saith, That he is of such great force, that he is able to bring into the Field upon a sudden occasion, a Million of Fighting Men; and of his Wealth and Riches many speak wonders, some saying he is able to purchase half of all the World, if it were to be sold: Others make it not so great, but say, that besides his necessary expences in the management of State Affairs; the payment of his Army, the pomp in his Court, &c. he lays up yearly in his Treasury Three Millions of Crowns. But without doubt his Revenue and Force is great; for it is said, That he himself proffered the *Portugals* a Million of Money, and another of Men, if they would employ them in a War against the *Infidels*.

The Government of this Emperour is absolutely Tyrannical, the People being used more like Slaves than Subjects, treating them as he pleases, as well to their lives as Estates; giving Honours to whom he pleases, which upon any slight occasion he taketh away again. He is held in such great reverence among all his Subjects, as well Rich as Poor, that at his name they bow their Bodies, and touch the ground with one of their fingers; and reverence his Pavilion as they pass by it, though he is not in it. And to keep up this Reverence, which he holds due to him, he seldom shews himself to his Subjects, and then not without his Crown on his head, a *Silver Crucifix* in his hand, and his Face covered with a Veil of *Taffety*, which according as he is pleased to grace the person he talketh with, he lifteth up and putteth down, to shew him his Face.

His Titles.

The Title of this Great and Mighty Emperour, I shall borrow from *Heylin*, who thus hateth it: *N. N. Supreme of his Kingdoms, and the beloved of God; the Pillar of Faith; sprung from the Stock of Judah; the Son of David, the Son of Solomon, the Son of the Column of Zion, the Son of the Seed of Jacob, the Son of the Hand of Mary, the Son of Nahu, after the Flesh; the Son of St. Peter and Paul, after the Spirit: Emperour of the Higher and Lower Æthiopia, and of the most Mighty Kingdoms, Dominions, and Countries of Xoa, Goa, Caffares, Fatigar, Angotæ, Balignazo, Adea, Vangne, Goyame,*

where

where the Fountains of Nile, Amara, Banguamedron, Ambea, Vagucum, Tigreman, Sabana; the Birth-place of the Queen of Sheba; Bérinagallum; and Lord of all the Regions unto the confines of Egypt.

They profess the *Christian Religion*, which was first made known unto them by the Eunuch of *Queen Candace*, who was baptized by *Philip the Evangelist*, and more generally received by the Preaching of *St. Matthew the Apostle*. Since which they have much swerved from the purity of the true Religion, by their many corrupt Opinions which are crept in amongst them; as they use Circumcision both to their Males and Females, when they are Children; and they Baptize their Males 40 days, and their Females 80 days after Circumcision: That Infants dying unbaptized, are sanctified by the Womb, by virtue of the *Eucharist* which the Mother receives after her Conception: They administer the *Eucharist* to Infants, presently after they are Baptized. They Baptize themselves in Ponds and Lakes every *Epiphany day*, as supposing that to be the day that *John Baptized Christ in Jordan*. They hold; that the reasonable Soul of Man is derived from their First Parents by Seminal Propagation. They acknowledge but one Nature, and one Will in *Christ*: After the receiving of the Sacrament, they hold it unfitting to Spit until Sun-set. Those Beasts which in the *Old Law* are held unclean, are so esteemed with them. They keep their *Sabbath day* on *Saturdays*: they allow their Priests no yearly means or stipends, neither do they suffer them to beg; but they are forced to get their livelihoods by the sweat of their brows, and labour of their hands. They accept only of the three first General Councils. They have moreover a Book, which is writ in eight Volumes (and as they say) by the Apostles assembled at *Jerusalem* for that purpose, the Contents thereof they most strictly keep.

We have divided *ÆTHIOPIA* into the Higher and Lower; esteemed the Higher, that which is towards the North and the East; the Lower, that which is towards the South and West. We have succinctly discoursed of the Parts of the Higher, proceed we now to the Lower.

This Lower *ÆTHIOPIA* extends it self from the River of the *Camarones*, where the bottom of the Gulph of *St. Thomas* is, and so turning about the Capes of *Negro*, *Bona Esperanza*, and *Des Carientes*, into the River of *Cuama*, which bounds it from *Zanguebar*, part of the Higher *Æthiopia*, as the other doth from the Kingdom of *Benin*, part of *Guiny*, which is in *Libya Interior*. We have likewise subdivided this Lower *Æthiopia* into three parts, *viz.* into *Congo*, *Monomotapa*, and the Country of the *Cafres*. We may yet subdivide these three Parts, each into two others, which will make six. The first shall be what is between *Guiny* and *Congo*; the second, *Monomotapa* and *Mono-Emugi*; and the last, the Land of *Cafres* on this side, and Westward; and the Land of *Cafres* beyond, and Eastward of the Cape of *Good Hope*. Between *Guiny* and the Kingdom of *Congo* there are divers Kingdoms, and divers People: The *Ambosins* and *Camarones* are on the Sea; then the Kingdoms of the *Capones*, the Country of *Angra*, the three Kingdoms of *Cacombe*, *Gabon*, and *Pongo*; of which this last is most powerful. Among these Estates are the Capes of *Lopo Gonçalves*; up in the Land are the Kingdoms of *Biafra*, *Medra*, *Dauma*, &c.

The Land of *AMBOSINS* and *CAMARONES* are near the River of *Camarones*; a Country very fertile. The Lands of *Capones* and *Angra* are pleasant, because of the many fresh Streams which water them. The first are poor, the *Capones* are malicious, those of *Angra* addicted to Arms. The Estates or Kingdoms which are about the Cape of *Gonçalves*, have their People of the same Tongue, the same Religion (who are Idolaters,) and the same Manners; and their Kings and Lords are in peace, and in good intelligence with one another: Those nearest the Sea are the most courteous and civil, by reason of the confluence of Strangers; and when they trade with those of *Europe*, they white their Faces with Chalk; their beautiful Garments are made of Mats, twisted with the Rind of certain Trees, and properly accommodated. Those of *Biafra* more advanced in Land, are very barbarous, addicting

Their Religion.

Lower Æthiopia, its extent and bounds.

its division and parts.

its People.

adding themselves to *Witchcrafts*, and sometimes sacrificing their Children to Devils. Those of *Medra*, *Dama*, and some others further off, are almost quite unknown, and possibly not worth regard. The *Portugals* traded here along a long time, and possessed several Parts on this Coast: within few years the *Hollanders* have taken divers places from them, some of which they have since retaken.

The Kingdom of CONGO.

Kingdom of Congo, with its Parts or Kingdoms described.

Kingdom of Loango described.

Kingdom of Congo, and its Provinces.

Bamba.

Songo.

Sunda.

Pango.

Beyond the *Equinoctial Line* and unto *Cape Negro*, lies the Kingdom of CONGO, under the name of which we comprehend many others, which have been Subjects, Tributaries, or Allies to the King of Congo; as are the Kingdoms of *Loanga* and the *Anziquaines*, to the North; of *Cacongo*, and the People *Gallas* or *Graquas*, to the East; of *Angola*, *Malemba*, *Maraman*, and others, to the South.

The Kingdom of LOANGA hath its principal City of the same name; others say, *Banza Loango*, or simply *Banza*; it is seated on the Sea, as is *Quilongo*, *Quarvi*, and *Majumba*. It comprehends six Provinces, and is throughout indifferent fertile in Grains; affords excellent Fruits, Wine of *Palms*; breeds many Cattle, and all things necessary for life is found here; it is well stored with *Elephants*, having more than any other Country: in these parts, they have quantity of *Ivory*, but have neither *Gold* nor *Silver*. The Country is very hot, by reason of its lying under the Line; but indifferent healthful and well peopled. Their King once subject, writes himself now but Ally to the King of Congo, and is called *Mani-Loango*, and the Governours of the six Provinces, likewise *Mani*, that is, Lord of such or such a Province. Their Subjects are all *Bramas*, who by Religion are *Heathens*.

The Kingdom of CONGO may be said to be the fairest of the Lower *Æthiopia*, though those of the *Monothorapa*, and *Mono-Emugi*, have more extent, yet hath he always been esteemed the most Polite; hath had all his neighbours Subjects, and the most part yet his Allies. It may have in length 200 Leagues, and about 120 on the Coast. It is subdivided into six great Provinces, to wit, *Bamba*, *Songo*, *Sunda*, *Pango*, *Batta*, and *Pemba*: which together hath 30 or 40000 little Towns.

Songo, *Sunda* and *Pango* lies upon, and mounting from the Sea up the River *Zaire*. *Bamba*, *Pemba* and *Batta* are towards the River of *Coanza*, and the Lake of *Aquilonda*; these three last making the most Southern parts; the three other the most Northern of the Kingdom: and all take their names from the principal places where the Governours of the Provinces reside.

The Country of BAMBBA is well stored with *Beasts* and *Birds*, both tame and wild; well watered with Rivers, hath Mines of *Silver*, and its People exceeding strong. Its chief places are, *Bamba*, on the River *Loze*; *Motole*, on the River *Dorati*; *Bengo*, also *Pavo*, *Lengo*, and *Mussulo*, on the Sea.

SONGO lies on both sides the River *Zaire*, which sends forth many turbulent Streams, and hath so many Islands that one part of it hath very little to do with the other; its chief places are *Sonbo*, nigh to *Cape de Pedro*, and on a branch of the *Zaire*; also *Bommo*, *Matinga*, *Cabinde*, *Malemba*; and *Cascas*, which three last are on the Sea.

SUNDA is indifferent fertile, hath several rich Mines of Metals; among the rest the Inhabitants set the greatest esteem upon *Iron*; by reason that of it they make their Materials for War; it is parted by the *Zaire*. This Country furnishes foreign Merchants with several rich *Furs*, as *Sables*, *Martrons*, &c. Its several chief places are, *Sunda*, *Bekegun*, *Iri*, and *Quincasso*.

PANGO is but barren, its Inhabitants barbarous, but strong in Arms: Its chief places are *Pango*, *Cundi*, *Funquenes*, and *Angotey*; and this Country is watered with the River *Zaire*.

BATTA

BATTA is also of a barren Soil, and its People also barbarous, but indifferent well skill'd in Arms; and that being forced to it rather to defend themselves, than to offend others. Its chief places are *Batta*, *Agilymba*, and *Gongou*.

PEMBA is held to be the richest and pleasantest Province of all Congo, being very fertile in Grains, Fruits, &c. hath good Water; the Air is healthful; the Inhabitants, since the *Portugals* sat footing there, are become very civil, imitating them both in Behaviour and Apparel. Its chief City called *Banza*, that is, the Court, and which the *Portugals* call *St. Salvador*, is the residence of the King, seated on an eminence, which discovers the Country on all sides. This situation together with its being in the middle of the *Estare*, gives it a great advantage; some esteem it to have 10000 Inhabitants, others 100000: possibly those understand 10000 Families, and those 100000 Souls; for the King being powerful, and his Court always great, there cannot but be multitudes. The Isle and City of *Loanda*, on the Coast of *Bamba*, were not long since in the hands of the *Portugals*; now the *East India Company* of the *United Provinces* have seized it. Its other chief places are *Simba*, *Pemba*, on the River *Danda*, *Lemba* and *Tinda*.

The most famous Rivers of this Kingdom are the *Zaire*, the *Lelunda*, the *Danda*, and the *Coanza*; the three last descend from the Lake of *Aquilonda*; the *Zaire* from the Lake of *Zaire*, from whence descends likewise the *Nile*; the *Zaire* hath 400 Leagues course, is very rapid, by reason of the many Cataracts or great falls which it hath from the Mountains; at its entrance into the *Estates* of Congo it enlarges itself much, embraces quantity of Islands, and at its Mouth hath no less than 8 or 10 Leagues breadth, yet presses its Waters 15 or 20 Leagues farther into the Sea, and that with so great a violence, that its Waters retain their natural sweetness, without being corrupted or intermingled with the Salt-waters of the Sea. The Rivers *Danda* and *Coanza* are Navigable, and receive great Ships. The Isle of *Loanda* is near the Mouth of the last: It is observed, that when the Sea is high the Springs of Running-water are fresh, and when the Sea falls they become salt.

The *Congolans* are naturally very sweet and easie, able and strong, but dull and idle: they will not take the pains to tame Beasts for service; nor to employ their fine Stones in Buildings; nor make their Birds of Prey for Hawking; yet make they curious Cloths, *Velvets*, *Damasks*, *Brocats*, &c. They have no harmony in their Instruments of Musick, but a confused mixture of many cords or strings and many Voices content them; their Money is of grey shells, taken on the Coast of the Province of *Bamba*, and these shells (especially the Females) are much esteemed, even in other Kingdoms, and almost through all *Æthiopia*. Their Grains, Fruits, Waters, Fowl, Sea and River Fish are excellent. They have store of *Elephants*; Mines of *Silver*, *Iron*, *Chrysstal*, *Marble*, *Jaspar*, *Porphyre*, &c. They know not their Histories but by the Reigns of their Kings, and without specifying the time, for they have no Letters, much less Learning; and hereupon some would make us believe, that *Emanuel* of *Portugal* having sent a famous Ambassador into Congo with many Presents, among others three fair Books excellently bound, and which contained the *Cannons*, the *Laws Imperial*, the *Ordinances*, *Civil Rights*, the *Infortiate*, the *Rubricks*, &c. and with these Books, many Doctors of Law to teach the knowledge of them; and when the King of Congo did understand the subject that these fair Books contained, and knew the profession of the Doctors, he was so surprized that he remained sometime silent; but in the end he caused these Books to be burned, saying, That he feared they would overthrow the very foundation of his Estate; and that he contented himself to judge according to reason, and need no other Interpreter than Common sense; but withal protesting, that he would remain a good and intire Friend to *Emanuel King of Portugal*; and so sent back his Doctors. The Author of the Essay of the Wonders of Nature applies this story to the King of the *Abyssins*: It is much at one; let us return to Congo.

E e e They

They say, that the Province of *Bamba* can furnish at a need 400000 strong and Warlike men; the other Provinces are no less, nor possibly worse peopled than this, but less addicted to Arms. This being esteemed the Bulwark of the Kingdom, affected to the service of their Prince, and so strong, that at one blow of a Sword they can strike off an *Oxes head*, or cut 4 Slave in two. Their *Elephants* are so great, that some of their Teeth are found to weigh 200 *l*. and they make such esteem of their Tails when they are old, that sometimes they exchange three Slaves for one Tail. They make of them divers Ornaments and Cords for their Instruments of Musick. The Kingdom falls only to the Males, and in default of Legitimates to Bastards: to shun all process, all Riches belong to the King, who disposes of them to whom he pleases, keeping to himself a certain Revenue. Christianity hath been introduced about 150 years ago, but not without much difficulty in its beginning.

Estate of
Cacongo.

East of Congo, and South of *Anziquaines*, is the Estate of *CACONGO*; and South of *Cacongo* are the *Giaques* or *Jaggas*, which the *Abyssins* call *Gal-las*, and others *Imbagolas*. These People are Vagabonds, Cruel, Men-eaters, like to the *Anziquaines* and *Moceveies*, living only on what they steal from their Neighbours. The great *Jagge* disposes absolutely, both of their Idolatry and their War.

Kingdom of
Angola.

The Kingdom of *ANGOLA*, once *Abonda*, is between Congo on the North, *Mataman* on the South, *Malemba* on the East, and the Sea on the West. This Kingdom hath 100 Leagues of Coast, to wit, from the 10th unto the 4th degree of *Meridional Latitude*; and that which continues unto *Cape Negro*, and belongs to divers Lords, tributary to it. The principal City of the Country is *Enguze*, and likewise *Dongo*, which Modern Authors place at the meeting of many Rivers: It is 75 or 80 Leagues from the Sea. The Mountains of *Cambamba*, rich in Mines of *Silver*, are in this Country, which the *Portugals* cause to be laboured. Its other chief places are *Massingan*, on the River *Coanza*; *Benguela*, seated on the Sea, on the Bay of *Thora*; and *Quicongo*, a Sea-Port Town.

Its Trade.

Through the whole Country there is a great traffick for *Slaves*, 20 or 25000 yearly being transported from the Port of *Loanda*. There are such multitudes in this Kingdom, that the *Grand Soba* (as they say) can in a moment raise 100000 Men; and that in *Anno* 1584, he raised 1200000. In *Anno* 1585, 600000. Yet these last were put to flight by 200 *Portugals* at the head of 10000 *Æthiopiens*. The first by 150 *Portugals* at the head of 8 or 10000 *Congolans*, which may make us judge of the goodness of their Militia.

The Kingdom is divided into *Provinces* or *Mirindes*, which have each their *Sobas*, which a 100 years ago, or little more, were only Governours for the Kings of Congo, now subject all to the Great *Soba* of *Angola*, who makes only some Present to the King of Congo. Its People use the same *Tongue*, *Money*, and *Arms*, with those of Congo.

The Empire of the MONO-MOTAPA.

The Empire of
the Mono-
Motapa, its ex-
tent, state, and
power of their
Kings.

THE MONO-MOTAPA, that is, the *Emperour*, *King*, or *Sovereign* of *Matapa*, is (according to *Vincent Blanc*) called by his People *Tahaghi*, and possesses an Empire so great, that it is made of 1000 Leagues circuit: It is said by him, that this Prince deports himself with gravity, and that there is no access to his person but with very great submissions: That he is always adorned with *Chains* and *Precious Stones*, like to a Woman, or rather like a Spouse: Is pleased to receive Presents, but gives little; keeps a great *Seraglio* of Women; which it is forbid to approach; and one part of his Guard (according to some) is likewise composed of Women, who are active, at their Arms, and courageous. He calls his principal City *Madrogan* (which is the *Mono-Motapa* of others) where his Royal Palace is, which is magnificent and great, flanked with *Towers* without, with four principal Gates; within hung with

with Tapestries of *Cotton* mixed with *Gold*, and adorned with many rich and stately Moveables. This Prince is always clothed after the manner of his Predecessors, nor may he change any thing, except the Ornaments of his Neck and Buskins. He wears no Foreign Stuffs for fear of *Poyson* and *Witchcraft*; his Drink is Wine of *Palm* distilled with *Manna*, *Amber*, and *Musk*. He spends much in *Odours* and *Perfumes*, making them be mixed in those Lights which are carried before him, and which serves where he is. His Court hath a great many Officers, which serve with order and silence; besides which, they are thronged with People. His Officers are easily known, because they carry the *Talmassura* on their Shoulder, more or less enriched, according to their condition or degree of place; but all in the same fashion with the Kings. The Inhabitants are all black, of a mean stature; active, and such good Footmen, that they are said to out-run Horses: They are courageous, addicted to Arms, as also to Trade. The Commonalty cover themselves but below the Waist, for which their Apparel is made of *Skins* of Beasts, *Cotton*, *Cloth*, or this like; but the better sort have *Cloths* and *Stuffs*, which are brought them from the Indies: The *Maid*s cover nothing of their Body till they are married. Their Houses are of *Wood*, or *Earth* whitened, fashioned like a *Clock*, or rather like a *Bell*. Those of the greatest Lords are the highest. They have as many *Wives* as they please; but the who is the first espoused is always the chief; and her Children alone inherit the Fathers Goods and Estate. The Women are here used very respectfully, none offering so much as to take the Wall of them. The *Maid*s are here not thought fit to be married, till their *Menstrua* or *Natural Purgations* shews their ability for Conception, which makes them solemnize with a great Feast their first *Flux*. They have no *Prison* in all the Country, but all Affairs are determined and ended on the place, so soon as they are convicted of the fact or crime; but above all Offenders, those for *Theft*, *Adultery*, and *Witchcraft*, are the most severely treated. And this sudden execution of Criminals, makes the King to be revered by his Subjects. Christianity found here some difficulties at the beginning; at present it is established by the consent of the King, who hath likewise permitted the *Portugals* to work the Mines of *Gold* and *Silver*, which in this Country are in great quantity, and so rich, that there are some who call this Prince, *The Emperour of Gold*. Not only the Mines, but likewise the Rivers have *Gold* in their Sand: among which, those of *Dos Infantes*, of the *Holy Ghost*, and of *Guama*, towards their Springs, which are towards the Lake *Zachaf*; but those of the Country care for no more of it, than is necessary to truck for what they have need of.

His Habit, &c.

His Inhabitants.

Its Fertility.

The Woods have great store of *Elephants*, which yields them *Ivory*; as also other Beasts. Hath rich *Pastures*, which are well furnished with *Cattle*, hath *Grains*, *Fruits*, *Fowl*, is well watered with many *Rivers*, in which are abundance of *Fish*. The *Air* is temperate, except that their Winter is colder than may be expected in that Climate, by reason of the Mountains which enclose it on all sides, and cross the Country: And their Winter is in the same time when we have our Summer, to wit, when the *Sun* is about the *Tropic of Cancer*.

The *Mono-Motapa* is said to be one of the most powerful Princes of *Africa*, if we consider the greatness of his Estate, his Riches, and the great number of Princes which hold of him, or are under his Dominion. They yearly receive the Fire which the *Mono-Motapa* sends them, or upon refusal are accounted Rebels. But all these People, though hardy and addicted to Arms, are unexpert in them: so that their Number would do them little good, if assailed by the *Europeans*. They believe only in one God, and punish with death *Idolaters* and *Sorcerers*.

The power of
the King.

But a word or two of the chief places of this Empire, and first of the Kingdom or Province of *BUTUA*, whose chief places are, *Butua*, *Carma*, *Gallita*, *Zet*, seated on the Lake *Zachaf*; *Dobdel*, *Calburas*; *Tialfo* and *Zimbira*, both under the *Tropic of Capricorn*; *Bafat*, *Quiticu*; *Amesa*; *Maitagasi*, *Boro*, *Amara*, *Giera*, and *Hagala*; most of which are Cities of some account, and seated on Rivers.

The chief places
of the Em-
pire of the
Mono-Motapa.

The chief places in *MONO-MOTAPA*, particularly so called, are *Mono-Motapa*, the chief of the Empire; *Zuggi*, *Jouros*, and *Mofata*. The chief in *ZEFALA* bears the same name, seated in an *Isthmus* so called. The chief in *QUITEVA* is *Chama*; seated on the River so named. About the Shoar of *Zefala* are several Isles, among which three bear the name of *UCIQUE PARVÆ*; three of *UCIQUE MAJORES*; and two of *SPICHELLÆ*; and farther a Sea; and towards the Isle of *Madagascar* is the Isle of *BAIXOS DE INDIA*. The chief place of *SEDANDA* is so called: And the chief places of *CHICANGA* are, *Zimbabos* and *Buro*. And these are the Parts comprehended under the Empire of the *Mono-Motapa*.

The *Mono-Emugi*, that is, Lord of *Emugi*; hath his Empire or Estates between the *Abyssins*, the *Cafres*, the *Mono-Motapa*, and the *Zanguebar*; so that it is about the Mountains of the *Moon*. The *Giaques* or *Zaggas*, which joyn to *Congo*, are likewise esteemed subject to this Empire: He hath often War with the *Mono-Motapa*, of which he seems once to have been a part, is in peace with the King of *Zanguebar*; that he may have commerce to the Sea, for he hath much *Gold*, *Silver*, *Ivory*, and the same Commodities as *Mono-Motapa*; but its People are more barbarous and brutish. The chief places in the *Mono-Emugi* are, *Agag*, *Astagoa*, *Leuma*, *Gamur*, *Beif*, *Bagametro*, and *Zembre*, seated on the bottom of the Lake *Zaire*.

CAFREERIA, or the Land of CAFRES.

CAFREERIA, or the Land of *CAFRES*, makes the most Southern Coast of all *Aethiopia*, winding like a Semicircle about the *Cape of Good Hope*; some begin it from *Cape Negro*, and continue it unto the River of *Cuama*: this separating it from *Zanguebar*, and the other from *Congo*, or what we have esteemed with *Congo*. Others begin it and end it with the *Tropic of Capricorn*; as well on this side as beyond the *Cape of Good Hope*. I esteem under the name of *Cafres* all the Coasts which environ the *Mono-Motapa*, both towards the West, South, and East: so that we may call these *Cafres*, *Occidental*, *Meridional*, and *Oriental*. This distinction being taken in regard of the natural situation in which these People are from the *Mono-Motapa*; or we may chuse rather to consider them in *Occidental* or *Oriental*, as we have already done; the *Cape of Good Hope* then keeping the one from the other. It hath formerly been believed, that these People had neither *Kings*, *Laws*, nor *Faith*, and therefore were called *Cafres*, that is, *without Law*. But it hath since been known, that they have divers *Kings* and *Lords*; as those of *Matamah*, where there are divers *Metals*, *Chrystal*, &c. And of *Melemba*, among the *Occidentals*; those of *Chicanga*, *Sedanda*, *Quiteva*, and *Zefala*, among the *Oriental*s; and others we know not, towards the South and *Cape of Good Hope*.

On the Coast of *Cafres* are these places and Isles, *viz.* *St. Nicolai*, *Piscarius*, the Port of *Carascals*, the *Cape of Good Hope*, *St. Martins Bay*, and the *Cape of St. Lucia*. Also these Isles, 4 bearing the name of *St. Lucia*, 2 of *St. Christophers*, 5 of *Crucis*, and 3 of *Aride*. Many of which, as likewise the *Capes*, are well known by Sea-men, especially the *Cape of Good Hope*. All these Coasts of *Cafreeria* are bounded within Land by a Chain of Mountains, formed by the Mountains of the *Moon*, and which inclose *Mono-Motapa*. That part of these Mountains which advance towards the *Cape of Good Hope*, are called by the *Portugals*, *Picos Fragos*, that is, *Watry Points* or *Rocks*. This *Cape* is the most remarkable piece in *Cafreeria*; the most Southern point of *Africa*, and of our Continent; and the most famous *Promontory* of the whole World. *Vasco de Gama* knew it in 1498, and after having doubled it, found the way by the *East-Indies* to the *Great Sea*; and from hence the *Portugals* boast to have been the first that had the knowledge of this *Cape*. But we have made appear in the general discourse of *Africa*, that the Ancients have both known and spoke of it. Near the *Cape of Good Hope*, and farther towards the South, is the

The Empire
of the Mono-
Emugi.

The Land of
Cafreeria de-
scribed.

The Cape of
Good Hope.

the *Cape of Needles*, which should be more famous, since it is more Southernly than the other by 12 or 15 Leagues: But the name, *Cape of Good Hope*, is given to all that Head of Land which is the most Southern of *Africa*.

The Air of this Country is sometimes temperate, and sometimes cold, by reason of the Mountains which are covered with *Snow* and *Ice*, from whence descends quantity of cold Waters. The *Vallies* and *Lower Countries* pleasant and fertile; hath store of *Woods* and *Forests*, in which are abundance of *Beasts* and *Fowls*, as *Deer*, *Antilopes*, *Baboons*, *Foxes*, *Hares*, &c. Also *Ostriches*, *Herons*, *Pelicans*, *Pheasants*, *Partridges*, *Geese*, *Ducks*, &c. They are well supplied with good Water, feed much Cattle, which they truck with Strangers for *Knives*, *Scizzars*, *Spoons*, and divers Toys; they have likewise much *Fish* in their Rivers.

The Inhabitants are Black, have thick Lips, flat Noses, long Ears; and in a word, very ill-shapen. They are more barbarous and brutish than the rest of *Africa*, they are *Man-eaters*; their chief ornaments in their Apparel are, Chains of Iron, *Brass*, *Beads*, *Bells*, or the like; and cutting and slashing their Skins in several shapes. Clothing they have none, only in the Cold season they wrap themselves about with Skins of *Beasts*. Towns they have none, or very few, for the most part living in the *Woods* and *Forests*, like brute Beasts. But the *Cafres* on the East are much more civil than the others; most of them have made a part, and are yet subject to the *Mono-Motapa*, who about 50 years ago divided his Estate into four parts, giving to his eldest Son what is within Land, and by much the greatest part; and to his three younger Sons, *Zuiteva*, *Sedanda*, and *Chicanga*, towards the Sea-Coast, for their Portions. *Cefala* or *Zefala* seems to make its piece apart, whose King pays Tribute both to the *Mono-Motapa* and the *Portugals*; and these have divers *Fortresses* on the Coast, *Sena*, *Tete*, *Cuama*, &c.

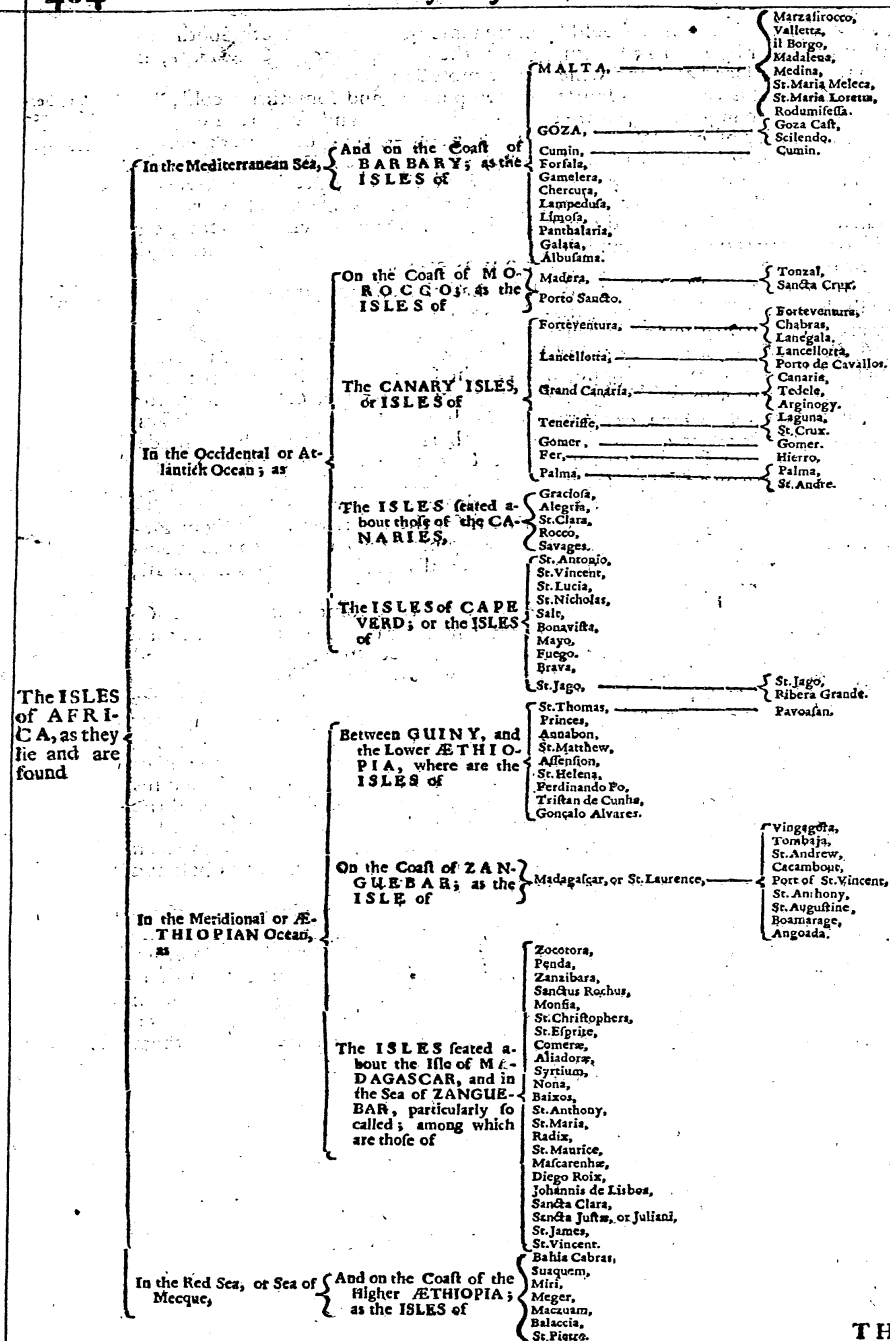
Zefala is so abundant in *Gold* and *Elephants*; that some take it for the *Ophir* whither *Solomon* sent his Fleet every three years: And they give for a reason, that the *Gold*, *Ivory*, *Apes*, &c. which that Fleet brought, are here found in abundance; That this Fleet parting from the *Red Sea*, there is no likelihood it should go to *Peru*, which some take for this *Ophir*; besides, that there is there neither *Ivory* nor *Apes*; but that it was rather to some part of *Asia* or *Africa*. They add, that there remains not far from *Zefala* some footsteps of ancient Buildings and Inscriptions, left there by Strangers long time ago: Nay likewise, that there is some Notes and Books how *Solomon* sent thither his Fleet. Moreover, the *Septuagint* translate *Sophira* instead of *Ophir*, and the name of *Sophira* is not overmuch different from *Sopholo*. However it be, there is here store of *Gold* both in the Mountains and Rivers, and often very clean and pure, as well in Powder as Sand; and this *Gold* is esteemed the best and finest in *Africa*, ours seeming but *Brass* in comparison of it.

The Country is healthful and pleasant, seated only on the Coast; the *Mono-Motapa* confining it within Land: A part of its now Inhabitants are not the Natives, but descended from that Coast which belonged to the *Mono-Motapa*. The Natives (as I said before) are Black, and *Idolaters* or *Cafres*, the others very swarthy, and for the most part *Mahometans*. They have a great Trade on this Coast for their *Gold*, two or three Millions being yearly brought hence, and that for Toys and things of a very small value, which are carried them from divers parts of *Asia* and *Europe*, and some parts of *Africa*.

The Air, Fer-
tility, Commo-
dities, &c. of
the Country.

The People
and their
Trade.

The



THE
I S L E
O F
MADAGASCAR,
O R
St. LAURENCE.

THE Isle of MADAGASCAR, or St. LAURENCE, is much greater than any about Africa, if not the greatest of both Continents. It stretches itself from a little on this side the 12th unto a little beyond the 26th degree of Meridional Latitude, which are more than 14 degrees of Latitude; but sloping from North North-West to South South-East, it is from Cape St. Sebastian to that of St. Romain about 400 Leagues long. Its breadth ought to be considered at twice, in that part nearest the Equator it is 60 or 75 Leagues broad; in that part towards the South the least breadth passes 120, and stretches sometimes to 150 Leagues.

Our last Relations say, That it hath Mines of Gold, Silver, Copper, Iron, Rocks of Chrystal, and excellent white Marble; that there are found Emvalds, Saphirs, &c. many sorts of Gums and Rozins, especially great store of that Gum which the Druggists call Dragons Blood, which they extract out of the Flowers of a certain Tree which grows there. They have also Talque, Cotton, Indico, Sugar Canes, Saunders, Ebony, Ivory, Honey, Wax, Hides. Their Ground yields Salt, Salt-Peter, and in most places Grains; and upon their Sea Coasts is found abundance of Ambergreese. And for these, and several other Commodities that are here found, are brought them in exchange, Corals, Pater-Nosters, Chains, Beads, Bracelets, Glass-Pendants, and divers Toys, &c.

Its Inhabitants are for the most part Black or very Tawny; and some White, which in all appearance came from Asia. They are of a good Stature, and well shaped, are very tractable and courteous to Strangers, and more especially to the French, than any other Europeans; are addicted to idleness, and not caring to cultivate the Earth; their Clothing is only a piece of Cotton-cloth of several colours, which they fasten about their middles, and hangs down to their knees; and on their Heads, a Cap made of the Barks of a Tree; besides which, they adorn themselves about their Neck, Arms, Legs, &c. with those Toys aforesaid. Their Feeding is exceeding gross; their Houses are no better than Hog-sties, or little Huts made of Branches of Trees, except those of their Princes which are made of Wood; but of no large size, nor over handsom: They lie upon Mats; and their Cloth which they wear about them in the day, serves for a Coverlid in the night. They are Heathenish, and given to Adoration, (some say they adore the Devil) using Sacrifices, which they do in the Woods, not having Churches; they have no Civil Form of Government, but he that can make the greatest party, and hath the greatest Family, is in most esteem and command, to which end they have as many Wives as they can keep, to increase their Progeny.

Isle of Madagaskar, with its length and breadth.

Its Commodities and Trade.

Its People and their abode.

The Isle very plentiful of Cattle.

They have a great number of *Oxen, Sheep, Kids, Hens* of divers sorts, and quantity of *Rice*; they make Wine with *Hony* and certain *Roots*; which is so strong that they are frequently drunk with it; they have for the most part those Beasts that are found among us; but yet all with some difference: Their *Oxen* have between their Neck and Shoulders a great lump of Fat, which they esteem excellent: Their *Sheep* have their Tails 20 Inches about, and as much in length: Their *Goats* are very high, and their *Hogs* little. They have *Samandars, Camels* of divers colours; *Apes* of many kinds, and believe that these *Apes* would speak, but for fear they should be compelled to labour. They have *Crocodiles* and *Tortoises*, of which some have their Shells so great, that they will cover 10 or 12 Persons; and they find sometimes 5 or 600 of their Eggs as big as *Hens Eggs*: their Flesh is delicate and fat, in taste resembling *Veal*. They have other *Tortoises* which are only 3 or 4 foot diameter; and their Shells being polished are figured with divers colours, of which they make *Cabinets*, little *Boxes*, and other pretty Moveables esteemed in the *Indies* and in *Europe*. Their *Pheasants* are stronger and fairer than ours, their *Partridges* bigger, and of divers colours: They have *Paroquets* as big as *Crows*, and black; another middle sort, and some as little as our *Larks*; the one and the other of divers colours: They have *Singing-Birds* not yielding to those of the *Canaries*. Their *Bees* are little, their *Hony* excellent; their *Ants* flee, and leave on the Bushes where they light a *white Gum*, which they use instead of *Glue*. Their *Colibri* or *Fly-Bird* scarce weighing two *Bees*, so little is it, feeding only on the Dew it sucks from Flowers. They catch in their Seas an infinite quantity of *Fish*; among others, *Skates* so great, that they are able to satiate 300 persons one meal. Their *Date-Trees* supply them with *Drink*, their *Orchards* with *Fruits*; their *Cotton* with whereof to make *Tred* and *Stuffs* for Clothing, their *Indico* with a Blew colour, their *Tamarind* refreshes them; their *Rape* or *Balusier* blacks their *Teeth*, which by them is esteemed a great Beauty; they gather *Aloes* from several Trees. One of the principal riches of the Country is *Ebony*, both for its beauty, smoothness, and black colour, and for the flame and odour it yields in the fire: Its *Sap* infused in Water, heated and taken luke-warm, purges *Flegm*, and cures *Venerial* distempers.

Their Fowls.

Their Fruits.

Among their Fruits they have *Damsons* twice as big as ours; *Minabollans* of many kinds, *Ananas, Citrons, Oranges, Pomegranates, Grapes, Dates, Coco-Nuts, &c.* They gather *Manguet, Ginger*, and divers *Roots*, which they eat instead of Bread, and which serves for divers other uses; they have quantity of *Rice, Millet, Beans, Pease, French-Beans*, both red, white, green, and all sorts of *Pulse*. The *Sensitiva Herb* is found among the *Tupater*, whose Leaf touched, they all close and shut up one within another, hanging towards the ground, and not raising up nor opening themselves again till a good while after, and that by little and little.

Its chief places.

The Isles hath many good Roads and commodious Ports, and every where are found good Water and Victuals; but the Air is unhealthy to the *Europeans*, by reason of the great Heat which here reigneth; it lying under the *Torrid Zone*; yet the *French* have established a Colony sometimes in one place, and sometimes in another. The Bay of *Anton-Gil* (or of *St. Anthony*) is the best in all the Island. On the same Coast, and farther towards the North, is *Boamarage*; more towards the South *Angada*, and continuing *Cacambout, Mamaloufe, Manajura*; or the Port of *Prunks, Matatani, Manapate*; or the Port of *Gallions, Maunatenga, Anthonb, Romag*, near the Port of *Caca* and *Antipere*; or *Sancta Clara* near *Cape St. Romanus*. All these places or Ports are builded with Wood, covered with *Leaves*, and inclosed with *Palisades*, as throughout all the Isle. On the other side towards the West, and directly opposite to the Coast of *Africa*, are *Kingagwa, St. Andrews* in the Bay of *Prace*, *St. Vincent, St. James*; the Port or *Gulphed, St. Augustin*, the best next to *Anton-Gil, Tombaja, &c.* The middle of the Isle rises into Mountains covered with Wood, where is *Ebony, Samagans, Orange-Trees, Citron-Trees, &c.*

About

The Isle of Santa Mary described.

About *Madagascar* are a great many of Isles, as that of *SANCTA MART*, near the Bay of *Anton-Gil*, about ten or twelve Leagues in circuit, is fair and fertile; affords store of Provisions, and *Potters Earth*, and their Seas quantity of *Whales*, which they catch by darting on them a certain *Iron* fixed to the end of a Cord; which when they have tired themselves, they make to the shore; and of these *Whales* they make *Oyl*, with which, as also with their *Provisions* and *Potters Earth*, they drive a Trade.

The Isles of *COMERES*, are Five principal ones, as *St. Christophers, St. Esprit, Lourea, Comera, and Gasidsa*. The *Inhabitants* of this last are perfidious; the others more civil; and under one King, alone, who resides at *Ansuwanny*, where there is some Trade: the most part are *Mahometans*; the Soil is pleasant and fertile, because of the Rivers which descend from the Mountains, and water their *Fields*. They have all sorts of *Birds*, they have no *Iron*; they fetch from *Madagascar, Rice, Millet, Amber-greece, and Slaves*, which they transport into *Arabia*, and the *Red Sea*; from whence they bring *Stuffs*, and *Indian Habits, Amfum* or *Opium*.

In 1613. the *Hollanders* touched on this Island, and received great refreshment. It is observed, that for a Quire of common *Paper*, they had an *Ox*; for a common *Looking-Glass* another; for a Dozen of *Little Bells*, which they fastned to *Hawks Legs* another; for a Bar of *Iron*, three *Oxen, &c.*

The Isle *MAURICE* or *SANCTA APOLINA*, between 19 and 20 degrees, seems to have been inhabited before the *Hollanders* established a Colony. It is about 15 Leagues in compass. *Mandello* saith, that this Island hath a good Haven, both deep and large enough for fifty Sail, of great Ships to harbor in, which makes it to be very pleasant, having many Mountains which are well clothed with *Trees*, and always green; among which, some are so lofty, that they seem to overtop the *Clouds*. And its *Valleys* as pleasant and green, and adorned with several sorts of *Trees*, as well those that bear *Fruits*, as *Cocoers, Dates, Oranges, Citrons, &c.* as those which yield none, as great quantity of excellent *Ebony*, and other *Trees*; some of whose wood is Yellow, others Red, others mixt; and all with fair and lively colours. The Leaves of their *Palm-trees* are large enough to cover a man; the *Birds* are here so tame, that they suffer themselves to be taken with the hand, or killed with a stick. They have *Tortoises* strong enough to bear a man, but fourfooted Beasts they have none.

The Isle of Maurice described.

Besides these Isles aforesaid, there are several others which are seated about the Isle of *Madagascar*, as Two bearing the name of *Deigsoares*: Two by the name of *Nunni Pereira*: Three by the name of *Deigo Roix*: Four by *Sancta Clara*: Two by *St. Romanus*: Three by *St. Julianus*: Three by *St. Jacobus*: Nine by *St. Vincent*: Three by *St. Christophers*: Three by *Comora*: And eight by the name of *Bugi*.

Also the Isles of *Boamarage, St. Anthony, St. Maria Radix, Mascarenhe, Johannis de Lisboa, Syrtium*, and *Mosambicha-Nova*, with some others.

Between the Isle of *Madagascar*, and the main Land, about 70 Leagues from the Isle, 100 from *Cefala*, and 150 from *Mozambique*, are the Banks of *India* infamous for Shipwracks, and particularly for that of the Admiral *Fernando Mendoza* in 1586. The Banks and Rocks are of sharp Stones, and with divers points like to *Coral*, some black, others white, others green, but all horrible even to behold.

The Banks of India very dangerous for Shipwracks.

There rests a great number of Islands to the North and East, and between the North and East of *Madagascar*, and among these Isles many Banks and Rocks. We will omit a particular description of them, as unnecessary, and only say, that the *French* have often designed to establish a powerful Colony in the Country; encouraged by its Commodities, and the great Commerce it is like to maintain.

The Isles of CAPE VERDE.

The Isles of
Cape Verde de-
scribed, viz.

One hundred and fifty Leagues from Cape Verde, and towards the West, are a body of Islands which extend themselves from 13 $\frac{1}{2}$ unto the 19 degree of Latitude, and from 153 $\frac{1}{2}$ unto 157 or thereabout of Longitude. They are called in general the Isles of Cape Verde, because that Cape is the nearest main Land to them. Amongst these Isles there are 10 in some consideration, though a part of them not inhabited; they are ranged almost in form of a *Crescent*, or *Semi-Circle*, of which, the convex part regards the Continent, and the two Points, the Ocean: That which makes the Point towards North and West, is that of St. Antonio, which those of St. Vincent, St. Nicholas, and Santa Lucia follow, advancing between East and South; then those of Salt, Bona Vista, and Maya, descend from North to South, and are the most Easterly of all: Those of St. Jago, of Fuego, and Brava, the most Southern; returning from East to West, and advancing a little towards the South. So that St. Anthony and Brava make the two Ends or Points towards the West; Bona Vista makes the middle of the half Circle towards the East.

SANTA LUCIA, St. NICHOLAS, and St. JAGO, are the greatest, having each 100 or 120000 paces of length; 15, 20 or 30000 of breadth; and 200 or 250000 paces of circuit. St. Anthony and St. Vincent are less by more than half, and not of above 100000 paces in circuit; the rest, which are the least, have not above 30, 40 or 50000 paces. I make no account of seven or eight others, whose names have not been given us, and which are rather Rocks than Isles.

St. JAGO is the greatest and the chief of all, having a Bishops seat in the City of the same name; besides which, are Ribera Grande, with a good Port towards the West, Praya towards the East, St. Mary towards the North, all with their Ports. Some place likewise St. Thomas, whose Port is dangerous; others St. Domingo, others St. Michael: possibly these fall under some of the others. Ribera Grande hath 500 Houses; the Air is unhealthful, the Land hilly, but the Valleys fruitful in Grains, Vines, Fruits, Sugar Canes, Millons, &c. Feeding much Fowl and Cattle, and particularly Goats in abundance: These Beasts bringing forth young every four Moneths, and three or four at a time; and the Kids are very fat and delicate.

SANTA LUCIA is the best peopled after that of St. Jago. St. Nicholas, St. Vincent, and St. Anthony, have been esteemed Desert, yet they appear to have many Inhabitants, though not so many as they could feed: The Ships of the United Provinces passing here in 1622. found in that of St. Anthony 500 persons, Men, Women, and Children, all Ethiopians. St. Vincent and St. Nicholas, had no less. At Mayo these Ethiopians are strong, and of good stature; but it is to be believed, that every where are some Portugals to keep the rest in awe.

The Isles of SALT, of BONA VISTA, of MATO, and of St. JAGO, yield to great quantity of Salt which is made naturally of the Water, which the Sea from time to time leaves, that besides what they consume in the Country, they laded every year more than 100 Ships, which is transported into other Countreys; and yet there remains six times as much, which becomes useless. It is reported, that the Isle of Mayo could make alone, lading for two thousand Sail of Ships yearly; and the others not much less. The other riches of the Country lies in the Skins of their Goats, which are in so great quantity through all these Isles, that many flocks are seen of 1000 Head. The Skins are sent to Brasil, Portugal, and other places, and make excellent Cordovans. The Flesh is salted in the Country, and sold to Ships going and returning from Brasil to the Indies. Besides the Salt and Woats which are the principal riches of the Country, they have many Wild Horses, Oxen, Apes, &c. also Cotton, whereof they make several Manufactures.

Also

Also Rice, and many sorts of Grains. Among their Fowl, they have one kind particular to them, which they call *Flamencos*; the Feathers of their Bodies are all White, and those of their Wings Red as Blood: Their *Tortoises* are not above two or three foot long; they come out of the Sea, and lay their Eggs in the night, covering them with Sand, and the heat of the Sun hatches them. In Fuego and Brava they gather Wines which yield little to those of the Canaries.

Between the Islands of Cape Verde, and the main Land, inclining towards the Canaries, the Sea is called *Sargasso*, because from the 20 to the 24 degree and for the length of 30, 40 or 50 Leagues, the Sea is covered with an herb like to that which is found in the bottom of Wells, and which the Portugals call *Sargasso*. This Herb, except that it is more Yellow, resembles Sea-Parley, bearing certain Grains or Fruit at the end, but of neither taste nor substance. Many have been much troubled to know from whence these Weeds come, which are distant from the Isles, and from the firm Land more than 60 Leagues, and in a part of the Sea, where there is no bottom found: Nevertheless, they are so close, and in so great quantity, that the Water seems rather a Meadow or Green Field, than a Sea. Ships which fall among these Weeds, had need of a good Wind to disengage themselves; and I believe it was these which hindered *Sarapes* from finishing his course about Africa, and were the cause of his misfortune. This *Sarapes*, Son of *Teaspes*, one of the *Achemenides*, having ravished the Daughter of *Zopyrus*, the Son of *Magabises*, was condemned by *Xerxes* to be crucified. His Mother, the Sister of *Darius*, caused this punishment to be changed into another, to wit, he was caused to make the Circumnavigation of Africa; which could not be done without great difficulty and hazard. He embarked in Egypt, passed the Pillars of *Hercules*, entered into the *Occidental Ocean*, and passed far to the South, along Africa; but knowing that it would yet require much time and pains to end this course, he returned into Egypt, and thence to the Court, where he said he had met with something that hindered his Ship from passing farther. *Xerxes* took him for a liar, and made him suffer the death he was before condemned to. But to continue: The Position wherein the Isles of Cape Verde are now found, answers much better to the Position of the *Fortunate Isles* of *Ptolomy*, than that of the *Canaries*. *Ptolomy* places his *Fortunate Isles* between the 10 and 16 degree of Latitude; the Isles of Cape Verde are between the 13 and 19; the *Canaries* beyond the 26. The Meridian of the *Fortunate Isles* of *Ptolomy*, is at 8 degrees of Longitude from the Coast of Africa, and towards the West. The least Meridian of the Isles of Cape Verde, is at 8 degrees of Longitude from the same Coast, and towards the same side. The least Meridian of the *Canaries* touches the Coast of Africa. *Ptolomy* confines his *Fortunate Isles* under one Meridian, and extends them from South to North, between the tenth to the sixteenth parallel or degrees of Latitude, which are five degrees of Latitude. The Isles of Cape Verde are not justly under one Meridian, but under two or three, and extend themselves from the 13 $\frac{1}{2}$ to the 19, which are five degrees of Latitude. The *Canaries*, on the contrary, are all couched from West to East, and almost under the same parallel or degree of Latitude, which is the 27; lengthning themselves from the first to the 6 of Longitude. These four Reasons are very strong to prove, that the Isles of Cape Verde do rather answer to the *Fortunate Isles* of *Ptolomy*, than the *Canaries*. Their distance in regard of the *Aequator*, is not different from that of the *Fortunate Isles* of *Ptolomy*, but three degrees; that of the *Canaries*, is 15. Their distance in regard of the Coast of Africa, agrees with that of the *Fortunate Isles*, not with that of the *Canaries*. The disposition of their situation from South to North, approaches near to that of the *Fortunate Isles*; and the number of the degrees of Latitude which they contain, absolutely agrees with it. The situation of the *Canaries* from East to West, and the little Latitude they contain, are much contrary. Notwithstanding all these Reasons, we shall yet make it appear, that oft-times we must not conclude on the Positions of *Ptolomy*, and that the *Canary Islands*

Fff z

answer

Fuego, Brava

The Sargasso
Sea.A story of Sa-
rapes.The Isles of
Cape Verde.

answer to the *Fortunate* Islands of *Ptolomy*, and the Ancients, and not these of *Cape Verde*.

Let us speak first a word of the *Madera's* and *Porto Sancto*, which belong to the Crown of *Portugal* as well as those of *Cape Verde*. But before I pass to the *Madera's*, a word or two concerning its Inhabitants, who *Mondello* maketh to be black, corpulent, but well proportioned; he saith, they are envious, mischievous, and dangerous people; for the most part *Pagans*, worshipping the *Moon*, and adoring the *Devil*, whom they call *Cammate*. Some of them are *Mahometans*, as far as Circumcision. They marry many *Wives*, whom they make to labour like *Slaves*, as well in the Fields as in their Houses; and they are accustomed to such hardship, that as soon as they are delivered, they go and wash themselves and the Child in the Sea or next River. They are not admitted to sit at meals with their Husbands, but wait till they have din'd or sup't. They believe the Resurrection of the Dead, but withal think that they shall rise *White*, and trade there as the *Europeans* do. He saith, they are great *Drunkards*, and their debauches are always at the Funeral of their Friends, which commonly lasts four or five days together: During which time they do nothing but drink and weep in remembrance of their Friend departed. They are very turbulent and quarrellsome, being always at wars with their Neighbours; their Arms are the *Bow*, and a kind of *Lance*, in which they are very expert. He saith also, that the greatest Marks of their Victories are the *Privy-parts* of their Enemies, which they cut off, and give to their *Wives* who wear them as *Neck-laces*, which by them are esteemed far beyond *Pearls*. The Country is indifferently fruitful, hath store of *Cattle*, as *Oxen*, *Beuffers*, *Elks*, &c. whose *Hides* they have a good Trade for; as also for *Elephants Teeth*, *Wax*, *Rice*, *Amber-greece*, *Sugar Canes*, *Cotton*, whereof they make several *Manufactures*, *Cordovants*, &c.

The Fertility.

MADERA Island.

THE Isle of *MADERA* or *MADEIRA* as the *Portugals* say, is under the 32 degree of *Latitude*; about 25 Leagues long, 8 or 10 broad, and 60 of circuit. It was discovered in 1420 by *John Goncalves* and *Tristan Vaz*, under the Auspices of *Henry Infanto* of *Portugal*; and under the same *Johannes Zarco*, and likewise *Tristan Vaz*, discovered *Porto Sancto* in 1428. The one and the other were Desert, and particularly *Madera* was so covered with *Wood*, that they were fain to set it on fire to make room for what they would Till. The *History* saith, that this fire lasted six or seven years, before it ran through all the Island and consumed the *Woods*; and among the first *Inhabitants*, some were constrained to save themselves in the Water, to avoid the heat of the Earth; but yet their design so well succeeded, that the Earth, for a long time after, yielded sixty for one; which by little and little, diminished to 50, 40, 30, and possibly now to twenty five for one. The Air is almost always temperate, many *Fountains*, and seven or eight *Rivers* so refresh this Country, that it is very pleasant and fertile. The *Vines* bear more bunches of *Grapes* than *Leaves*, and their wine is strong and racy; their *Wheat* excellent, though the Country be Mountainous: Their *Sugars* delicious, bearing the Bell from all others; they have much *Fowl*, as *Hens*, *Pigeons*, *Quails*, *Partridges*: they have quantity of *Fruits*, as *Oranges*, *Citrons*, *Pomegranates*, *Honey*, *Wax*, *Dragons Blood*, *Cordovants*, *Cedar-wood*, with which they make all sorts of *Joyners* work so artificially, that it is transported into *Europe*, and elsewhere. Those *Mountains* and *Woods* which are restocked, have *Wild Boars*, &c. Its principal Towns, are *Tungbal* or *Tonzal*; the chief of the Island, and a *Bisboprick*, *Moncherico* or *Monchico*, and *Sancta Cruz*. All the Island contains 36 *Parishes*, 5 or 6 *Religious Convents*, 4 *Hospitals*, 6 or 7000 *Houses*, and about 25000 *Persons*; so many *Castles* and *Gardens* in the Field, that it seems a Garden of Pleasure.

The

The Madera Isle first discovered by the Portugals.

Its Air, Fertility, and commodities.

Its chief places.

THE Isle of *PORTO SANCTO* or the *Holy Port*, hath almost the same Commodities with *Madera*, but is not above 8 or 10 Leagues in circuit; hath no Fortrefs, which was the reason that in 1606. the *Pyrates* took away 6 or 700 persons. *Madera* answers to the Ancient *Cerne Atlantica*, and some have esteemed *Porto Sancto* to answer to the Ancient *Ombrio* or *Inaccessibilis*; but we shall shew the Country in the *Canaries*.

Porto Sancto.

The CANARY Islands.

THE *CANARY* Islands are Westward of *Africa*, almost opposite to the *Capes* of *Bojador* or *Non*; they are to the number of Seven; seated between the 26 and 28 degrees of *Latitude*; and between the 5 and 6, or little more of *Longitude*. If we comprehend some little Isles above *Lancelotta*, and likewise the *Salvages*, they would reach to the 29 or near the 30; if likewise the *Madera*, and *Porto Sancto*, they would pass beyond the two and thirtieth degree of *Latitude*. But there are few Authors esteem the *Salvages*, almost none the *Madera*, among the *Canaries*, because this last is too far distant and belonging to the Crown of *Portugal*; the *Canaries* to the Crown of *Castile*; and the *Salvages* being Desert, almost no account is made of them. And now we shall make it appear, that the Body of the *Seven Fortunate Isles* of the *Ancients*, answers in all things to the Body of the *Seven Fortunate Isles* of the *Ancients*.

The Canary Islands described, viz.

We have before set down those Reasons which might make us believe, that the Isles of *Cape Verde* might answer to the *Fortunate Islands*, but now shall produce others, and those stronger for the *Canaries*. In the *Occidental* or *Atlantick Ocean*, and to the West of *Africa*, *Ptolomy* makes account of only one Body of Islands, which he describes to the number of six. We find now in that Ocean, and not far from *Africa*, three different Bodies of Islands, and each very considerable; to wit, the *Azores*, the *Canaries*, and those of *Cape Verde*. Of these, the *Canaries* are nearest to *Africa*, and the most Eastern; the *Azores*, the farthest and most Western; and those of *Cape Verde* do remain in the middle, as to *Longitude*: And moreover, those of *Cape Verde* are the nearest the *Aequator*, and most Southernly; the *Azores* the farthest off, and most northernly; and the *Canaries* in the midst, as to *Latitude*.

Canary Isles; the Fortunate Isles of the Ancients, & why.

Now the one of these three Bodies of Islands must answer to the *Fortunate Isles* of the *Ancients*, and of *Ptolomy*, placed in the first *Meridian*; and among *Modern Authors*, if there be any which would give the first *Meridian* to the *Azores*; and others to those of *Cape Verde*; and others to the *Canaries*; it is for the most part out of the belief they have, that one or the other answer to those *Fortunate Isles*.

Ptolomy having made account but of one body of Islands in the *Occidental Ocean*, it is more likely to be that which is nearest the Main Land, and *Gades*, then those farther off. This reason makes for the *Canaries*. *Pliny*, *Solinus*, *Capella*, and others, have made account of three different Bodies of Islands in this Ocean; to wit, the *Fortunate Islands*, the *Gorgades* or *Gorgons*, and the *Hesperides*, placing their *Fortunate Isles* near the Coast of *Mauritania*, the *Gorgades* two days sail from the Coast, and the *Hesperides* forty days sail farther then the *Gorgades*, and at the bottom of some Gulf; so that these answer, either to the *Azores*, or to the Isles of *St. Thomas*, in the bottom of the *Aethiopian Ocean*; or rather to the *Antilles* or *Caribes* in the Gulf of *Mexico*, as we shall speak more in another place: They cannot answer to the *Canaries*, nor can the *Gorgades* answer to others than those of *Cape Verde*; the *Canaries* then remain for the *Fortunate*: This is another reason for the *Canaries*. But the goodness of the Air, the fruitfulness of the Soil, their proximity to the Coast of *Africa*, the names and particularities of every one of the *Fortunate Isles*, absolutely concluded them the *Canaries*.

The

The *Fortunate Isles* received this name from the *Ancients* only, because of the healthfulness of the *Air*, and fruitfulness of the *Soyl*. The *Canaries* are excellent healthful, the *Azores* little, and the Isles of *Cape Verde* not at all healthful; likewise the *Canaries* have the best *Grains*, *Wines*, *Fruits*, &c. that are in the *World*, which they transport every where. The *Corn* of the *Azores* will not keep, and their *Wines* are consumed in the Country, not being strong enough to be transported to other places. In the Isles of *Cape Verde*, the Inhabitants can scarce gather *Corn* and *Wine* necessary; exporting nothing but *Salt* and *Goats Skins*. *Pliny* esteems some of his *Fortunate Isles* 8000 paces from the Coast of *Africa*; the *Azores* are 300 Leagues; those of *Cape Verde*, 150: Among the *Canaries*, *Forteventura* is not above 10 or 12 Leagues from *Cape Bojador*. The *Air*, *Soyl*, and *Neighborhood* to the Coast of *Africa* makes then for the *Canaries*: Let us proceed to confer their old and new names, and other particulars. *Ptolomy* calls his *Fortunate Isles*, *Aprofitos*, that is, *Inaccessibilibus*; *Hera*, that is, *Junonis Insula*; *Pluitulia*; *Ortelius* reads *Pluitalia*, *Casperia*, *Canaria*, *Centuria*, which interpreters write *Pinturia*. *Pliny*, *Solinus*, and *Capella*, call them *Ombrio*, *Junonia*, *Junonia Minor*, (instead of which, *Ortelius* puts *Theode*) *Capraria*, *Nivaria*, and *Canaria*.

In the numbering of these Isles, *Pliny* and his two *Apes* or *Copiers*, *Solinus* and *Capella*, agree upon six, changing little in the rank, names, and number of *Ptolomy*; but *Pliny* makes mention of one *Pluvialia*, among his *Fortunate Isles*, a little before he comes to number the other Six. This *Pluvialia* must then be a Seventh, and possibly *Theode* the 8.

Conferring the *Fortunate Isles* of *Ptolomy*, with those of these three Authors, we shall find that his *Aprofitos* answers to their *Ombrio*; his *Hera Insula*, to their *Junonia*: There is nothing answers to their *Junonia Minor*, or *Theode*, whether they be two different, or only the same Island: His *Pluitalia* answers to the *Pluvialia* of *Pliny*, which the two others did not know; his *Casperia* to their *Capraria*; his *Canaria*, to their *Canaria*; and his *Centuria* or *Pinturia*, to their *Nivaria*. Some names being corrupted by others.

At present it will be hard to judge which of the *Canaries* answer to each of the *Ancients Fortunate Isles*; yet let us see if we can effect it, and do it better then others have done; there is no difficulty for the Great *Canary*, since it retains its ancient name: The Isle of *Ferr* also most apparently answers to the *Pluitalia* of *Ptolomy*, or rather to make all particulars better accord with the *Pluvialia* of *Pliny*, where he saith, *Non esse aquam nisi ex imbris*, as at this day according to the common opinion, it hath no Water, but what distills from a certain Tree, always covered with Clouds. The Isle of *Teneriffe* likewise, whose Pike is always covered with Snow and Clouds, may answer to their *Nivaria*, *que nomen accepit a perpetua nive*. *Nebulosam*, saith *Pliny*; *ab aere Nebuloso*, saith *Solinus* and *Capella*. There remain four or five Islands wherein will lie the difficulty, *Aprofitos*, *Junonia*, *Junonia Minor*, *Theode*, if it be other then *Junonia Minor*, and *Capraria*.

Pliny seems to joyn this *Capraria* with *Pluvialia*, and saith after *Sebosus*, *Junoniam abesse a Gadibus 150000 pa. ab ea tantundem ad occasum versus Pluvialiam, Caprariamque*. Seeing the great distance he gives between these Isles, and from East to West, it may be said, that *Pluvialia* and *Capraria* are the most Western of the *Fortunate Isles*; *Junonia* the most Eastern; and that of the Isles of *Ferr* and *Palma*, being the most Western of the *Canaries*; that of *Ferr* being already allowed for the *Pluvialia*; *Palma* will rest for the *Capraria* of *Pliny*. On the other side, *Junonia* being the most Eastern, and 750000 paces from *Gades*, it must either answer to the *Forteventura* or *Lancelotta*, which are the most Eastern of the *Canaries*, and 6 or 700000 paces from *Gades* or *Cadiz*. But *Pliny* and *Solinus* make mention of two *Junonias*, of which, one being less than the other, we will give *Lancelotta*, which is the least, for their *Junonia Minor*; and *Forteventura* the Greater, for the other *Junonia*: And it seems in this passage, *Pliny* would observe those he met with first, from the nearest to the Coast, to the farthest off. Of the *Seven Canary Islands* we have given Six, which answer to the other Six among the *Fortunate*

Fortunate Isles. There remains the Isle of *Gomer*, among the *Canaries*; and *Ombrio* or *Aprofitos*, among the *Fortunate Isles*: This might make it be judged, that none must answer to the other; but there are many reasons to the contrary. The name of *Aprofitos*, that is, *Inaccessibile*, or *Ombria* and *Ombriana*, as *Capella* writes, shows, that this Isle hath been in a manner unknown, in regard of its Neighbors; nay, it seems impossible to be landed upon *Gomer* is between the Isles of *Ferr*, *Palma*, and *Teneriffe*; these three having been known, *Gomer* being in the midst and near these Islands; must likewise be known; and the Port of *Gomer* being one of the best, and most frequented of the *Canaries*, it cannot answer to the *Aprofitos* of the *Ancients*. Let us therefore leave this *Gomer* for *Theode*, and say, that it is 100 Leagues from the *Canaries*, is an Isle they call *San Borondoni*. Authors say, that those, which think not of it, find it sometimes by chance; but that it is never found by those who expressly seek it. However it be, it is held for truth; and Vincent *Blanc* assures us, that from the top of *Teneriffe*, whence may be seen all the *Canaries*, this is likewise sometimes seen, yet that those which attempt to go to it, cannot find it, though with great pains; whether it be that the Fogs hide it, or that some Current carries them from it; and for this reason they have given it the name of *Fortunada*, *Incontada*, and *Montrovada*, &c. After all these particularities, I can doubt no longer, but this Isle is the *Aprofitos*, *Inaccessibile*, and the *Ombrio*, that is, the shadow of the *Ancients*. And in the whole body of the *Canaries*, will answer to the whole Body of the *Fortunate Isles*, without adding the *Madera*; and from hence we have reason to place the first Meridian in the *Canaries*, as *Ptolomy* hath placed it in the *Fortunate Isles*, since these first answer to the last; which will give a great facility to the reconciliation of *Ancient* and *Modern Geography*, otherwise not to be done. Let us proceed to what each of the *Canaries* may have at present considerable, beginning with those nearest the main Land.

Forteventura, once *Erbania*, is not far distant from the *Cape Bojador*, is above 10 or 12 Leagues; from the Great *Canary* 16 or 18; from *Lancelotta* 6. Its greatest length is 25 Leagues, 15 or 16 its greatest breadth. In the middle, it streightens so much, that there remains only a League or two from one Sea to another: And this part was crossed with a Wall, which separated the Island into two Estates, when it was discovered. The Land is partly Mountainous, and partly in Plains; fruitful in *Wheat* and *Barley*: Along the Coast glide many streams of Fresh Water: and along these streams are the *Tarbitus Trees* crooked and soft, which bear Gum; of which is made pure white Salt. In the Country, besides the *Palma Trees*, which bear Dates, the *Olive Trees*, *Mastick Trees*, and the *Orfelle*, a Grain for Dying, there is a kind of Fig-tree, from which they have Balm as white as Milk, and which is of great vertue in *Physick*. They make Cheese of their Goats Milk, with which the Country is so well stocked, that they may afford more then 50000 yearly; and besides the profit made of their Skins, and their Fat, (each Beast yielding 30 or 40 pound) their Flesh is excellent. The Ports of this Island are not proper, but for smaller Vessels. Its chief places towards the Sea, are *Forteventura*, *Riqueo*, *queroque*, *Chabras*, *Baltarhays*, *Lanegala*, *Pozonegra*, and *Tarafulo*. Most of which are well frequented by Merchants, especially by the English, who of late are incorporated into a joyned Fellowship and Stock; and not only to this Isle, but to all the *Seven Canary Isles*.

LANCELOTTA is 16 or 18 Leagues long, and 10 or 12 large: The access to it, is difficult on the North and West Coast; the Country is plain towards the East, and the Continent where its Town and Ports are, as *Caya* or *Lancelotta*, *Porto de Nayos*, and *Port de Cavallos*: These last are near one to the other; the Isle hath the same properties with that of *Forteventura*.

The Isle of Forteventura described.

The Isle of Lancelotta.

The

The Great Canary Isle.

Its Inhabitants, chief places, fertility, commodities, and Trade.

The Isle of Teneriffe, with its high Pike Titha, described.

Its Fertility.

Its chief places.

The GREAT CANARY is almost equal in length and breadth, which is about 18 or 20 Leagues. It is the principal of these Islands, both because of its greatness, fertility, and the goodness of its Air; and because the Governor and Bishop of these Islands, whose yearly Revenue is 12000 Ducats, have their Residence in the City *Canaria*, which is fair, its Inhabitants well clad, and civil; and how hard soever it rains, its streets are dry, being only Sand. Its other places are *Tedele*, *Galder*, *Argoves*, *Gusa*, and *Del Douze Ingennos*, or *Twelve Sugar Engines*. This Island it exceeding fruitful, and the Soil so fertile, that they have two Harvests in one year, reaping their *Wheat*, *Barley*, and other Grains in February and May. Their *Wheat* is excellent, and its Bread very white; but from the excellency of its Fruits, as *Oranges*, *Citrons*, *Pomegranates*, *Figs*, *Olives*, *Apples*, *Pears*, *Peaches*, *Melons*, *Potatoes*, and above all, from its *Wine*, which is far beyond that of Spain. (Which among all others, bears the Bell with us in England.) From these we may judge of the goodness of the Island. They have also several other good Commodities, as *Honey*, *Wax*, *Sugar-Canes*, *Cheese*, and *Wood*, in great abundance; and breeds such plenty of *Cattle*, that the *Leather* is not one of the least Commodities they vend to other Nations, as *Spain*, *England*, *Holland*, &c. They have also store of *Fowl*; it is well covered with *Fir Trees*, *Dragon Trees*, *Palm Trees*, &c. And its *Rivers* well filled with *Fish*; but above all, they have *Plantons* which delights in Water; it is cut and shoots forth yearly into three or four Branches; each Branch bears 30 or 40 *Apples*, resembling a *Cucumber*; they incline to black; being ripe, they eat more deliciously than any *Comfit* in the World.

TENERIFFE, which some call *Enfer*, is distant from the *Grand Canary* 16 or 18 Leagues towards the North-West. Its utmost length is about 24 or 25 Leagues, and 12 or 15 its greatest breadth. The Land is raised in little Hills, and towards the middle, is the Pike of *Teitha* or *Terreira*, a straight and round Mountain, which reaches in height 45000 *English* paces, which is 45 miles, (some make it not so high; others higher;) but all agree that it is the highest Mountain in the World; even so high, that it may be seen in a clear day 60 Leagues distance at Sea; and from the top of it, a man may easily discover, and count all the other *Canary Islands*, though some of them be above 50 Leagues distance from this. It often casts forth fire and Sulphur: Its *Summit* is in form of a *Sugar Loaf* or sharp point, called the Pike of *Teneriffe*: For two or three miles about it, are only *Cinders* and *Pumice Stones*; two or three Miles lower, all is covered with *Snow* throughout the year, though there never fall any in those Islands; and yet lower are found the great *Trees Vintaico*, whose Wood is very weighty, and never rots in Water. Under these *Trees Laurels* cover almost 10 or 12 miles of the Country, where the *Singing Birds* of the *Canaries*, known among us by the name of *Canary Birds*, warble their pleasant notes. The foot of the Mountain casts forth divers Branches, and extends it self into a good part of the Island, which abounds more in *Corn*, then any of the rest; and sometimes it alone feeds them all. The Country between *Rotana* and *Realejo*, is so fruitful and pleasant, that its like can scarce be found in the World, such quantity it produces of *Grains*, *Wines*, *Fruits*, *Honey*, *Wax*, *Sugar*, *Flax*, *Silk*, &c. And from hence they have their *Vines* which they carry to the *West Indies*; the best of which grow on the Coast of *Ramble*. There are certain *Shrubs* which yield a liquor, like to *Milk*, which after it is thickned, makes an excellent *Gum* called *Taybayba*. From the *Dragon Tree*, cut towards the Root, they draw a red liquor which they call *Dragons Blood*, well known to *Apothecaries*. Its principal City *Laguna* so called, because of the Lake near to it, is 4 or 5 Leagues from the Sea, contains two parishes, and is the residence of the Governor of the Island. The other Cities, are *Sancta Crux*, *Rotana*, *Rajaleja*, *Carachico*, and *Adeca*. When it was discovered, its Kings to the number of seven dwelt in *Caverns*, and the bodies of their dead were set up about *Caves*, where they became as dry as *Parchment*; among which, the most honorable had a stick put in their hand, and a vessel of *Milk* before them.

GOMER

The Isle of Gomer described.

The Isle of Ferr described.

A Tree whose Leaves destill Water, which serves the Isle, there being no Rain or Rivers.

GOMER is 8 or 9 Leagues from *Teneriff*, is 10 or 12 Leagues long. Its chief City of the same name, often receives the *Indian Fleet*, and furnishes them with *Corn*, *Fruits*, *Sugar*, and *Wines*, as well as those of *Teneriff*, and *Canaria*. The Country is high, plain, bears many *Dragon-trees*, feeds small *Cattle*. Its Roads are deep and large: The People of this Isle were formerly more barbarous than those of the other *Canary Isles*, using many strange Customs not known elsewhere; among which they held it for a great sign of Hospitality, to let their Friends lie with their *Wives*, and receive theirs in testimony or return of kindness.

The Isle of *FERR* is the most West of all the *Canaries*, distant from *Palma* 15 or 16 Leagues; from *Gomer* only 5 or 6. This Isle in reason should be well known, many persons having been there; and many Authors treated very amply of it; yet I will a little shew the diversity found touching the greatness, and quality of the soil; as also the Water with which the Isle is served: Its chief place is called *Hierro*, seated on the Sea shore. Here is found plenty of *Hogs*, *Goats*, and *Sheep*; also of *Beasts*, *Fowls*, *Fruits*, and quantity of *Grains* and *Sugar Cakes*, and hath much *Cattle* which yield abundance of *Milk* and *Cheese*: Here is said to be no fresh Water, only in the middle of the Isle there grows a Tree, whose Leaves are much like those of the *Olive*, which being always covered with Clouds; drops from its Leaves if a *Cistern* which is underneath it, very good Water; and in such great abundance, that it suffices all the Inhabitants; as also all the *Cattle* and living Creatures in the Island. One *Jackson* an *English* man, who reports to have seen, considered, and measured this Tree in 1618, saith, That the water falls into a *Pond* containing 20000 Tuns, which in one night is filled; and that from this *Pond* the water is by divers Channels conveyed into other *Ponds* or *Cisterns*, through the whole Isle, which is very well peopled: some say it hath in it about 8000 people, and above 100000 head of *Cattle*, which for an Island but of six Leagues Circuit is very well; for if the Tree be in the middle of the Isle, it cannot be above a League distant from any extremity; and moreover more than 20000 Tuns of water, for 100000 months will be a Tun a day, for every five months, which is too much drink, if they drink nothing but water.

These particulars are contradicted by others. *The Conquest of all these Isles* saies many Trees; not one alone, otherwise it would be immortal. *Sanutus* saith, that the Cloud begins to rise about noon, and in the evening quite covereth the Tree, which at the same time destills water, drop by drop along the trunk, branches and leaves; and that it continues so till day. Others say, that this water falls from Noon all night, until a little after the Sun be risen: But most will have the Cloud perpetually about the Tree, and that it destills continually. *Suarez* makes the *Pond* or *Cistern* of not above 20 Tuns: The relations of 1602. say, two *reservoirs*, each 20 foot square; but neither *Suarez* nor others makes any mention of other *reservoirs* in the Isle; but will have this water in one place alone whither all go to fetch it. But let us pass from the *Ocean*, into the *Mediterranean Sea*, and come to *Malta*; which is one of the best; but none of the least considerable pieces of *Africa*. Nigh unto these 7 Islands, called the *Canary Isles*, are the Isles of *Roco*, *Sancta Clara*, *Gratioja*, *Alegria*, and the two *Savage Isles*.

PALMA is distant from *Gomer*, 13 or 15 Leagues to the North West. It is round or oval, and its Circuit about 25 Leagues: Abounds in *Corn*, *Wine*, *Sugar*, and all sorts of *Fruits*. It is well stored with *Cattle*, and therefore made the victualling place of the *Spanish Fleet* that pass to *Pern* and *Brasil*. The City of the same name, hath great confluence, by reason of its *Wines*, laden for the *West-Indies*, and other places. Its best, and like to *Makoesse*, is made about *Brenia*, whence are taken more than 12000 Pipes yearly; also *St. Andre*, and *Tassa Corde*, are on the Sea. It hath little *Corn*, which is brought from *Teneriff*. Four *Sugar Engines*: the Church of *Palma*, and the Governors House, are esteemed fair.

Ggg

The

The Island of MALTA.

The Isle of Malta.

Its situation.

The Isle famous for being the seat of the Knights of Malta.

Its length and breadth.

Its soil and Commodities.

Its Inhabitants.

Its Ports, Roads, and chief places.

The Isle of MALTA is in the middle of the Mediterranean Sea, and almost at an equal distance from the main Land of Asia, and Europe. It is about 600 Leagues from the Coast of Souria, and 500 from the Streight of Gibraltar: This Streight beginning the Mediterranean Sea towards the West; and that Coast ending it towards the East. Likewise from Malta to the nearest firm Land of Europe, which is Italy; and to the nearest Coasts of the firm Land in Africa, which are the Coasts of Tunis, and Tripoly, (these bounding the Mediterranean Sea on the South, that on the North) is 80, 90, and near 100 Leagues.

The Antients have esteemed it rather in Africa, than in Europe, and the opinion hath been followed by almost all modern Authors: though it be nearest the Isle, and Kingdom of Sicily, which is in Europe, and from which it likewise holds, then to Africa: and though it be in the hands of the Knights of Malta who are all Europeans, the native tongue of the Country, and most of their Customs, have always more resembled those of Africa, than Europe. This Isle at present is very famous, not for its greatness, nor for its fertility, neither for Antient renown; but by reason it is the residence of the Great Master, and Knights of St. John of Jerusalem, whom at present we call of Malta, where they have settled since they lost Rhodes: and because it serves as a powerful Rampire for all Christendom, and particularly for Sicily and Naples.

The length of the Isle is not above 20, or 25000 paces, its breadth 10, or 12000, and its Circuit about 60000 paces, which are 20, or 25 Italian miles in length, 10, or 12 in breadth, and 60 in Circuit. The Soil except the Antient City of Malta, is almost all stones, craggy, and dry: yet it produces Wheat, Barley, Cummin, and all sorts of Fruits; among others Figs, Apricocks, Citrons, Melons, Grapes, &c. It feeds Horses, Asses, Mules, Hogs, Goats, Sheep, Hares, Conies, Hens, Partridges, Quails, Faulcons, and other Birds of prey. And its Beasts, Fowl, Grains, Fruits, as likewise their Capers, Honey, and Cotton, of which they make Cotton Cloth, and several Manufactures, are excellent; yet it wants much Corn, and Wine for the necessary food of its Inhabitants, which are 75 or 80000 souls: and among which there are about 15 or 16000 Soldiers, besides the Knights, so that they are constrained to fetch their provision from Sicily, which they have at a certain rate, and with privilege to pay no Custom.

The natural Inhabitants of this Island are said to be miserable, churlish, and uncivil people, of complexion, not less tawny then the Moors; use the African Language, but follow the Religion of the Church of Rome, which the Knights are bound to defend. Their women are fair, who are debarred the society of men, and go veiled, as not desiring to shew themselves, and are guarded after the Italian manner; they have here a great many of Curtizans, which are tolerated, who for the most part are Grecians, who sit at their doors playing on Instruments, &c. to entice men in to them.

On the Coasts of this Isle, and beginning by Malta, and turning towards the East, South, and West, &c. to make the Circuit, the Ports, Roads, and Harbours, which present themselves, are Marza, or Marza-scala: then Marza Sirocco, where the Turks landed the 19 of May 1565, when they had a design to besiege Malta. The Great Master Vignacour hath since caused to be built two Forts, which defend the entrance; and a third upon that languet or tongue of land, which advances into the middle of the Port, enough to hinder any for the future from casting Anchor there in quiet; continuing towards the Coast which regards the South, and far towards the West, is nothing but Rocks, except it be a little Bay or Golfe of Pietra Negre, others call it Pietra Sancta, where the 5 of July arrived the first succour in favour of Malta. This relief was but of six hundred men, who passed from Pietra Sancta to the old City and from thence

thence to the Bourg Il-Borgo, which the Turks besieged, after having taken the Fort of St. Elmo, and this assistance served much to the defence of that place. Pietra Sancta regards towards the South, the Rock of Forfolo or Fur-fura. Towards the West are the Golfes or Bayes of Antiofega, the Islanders call it Hayntofeca, then Muggiara where the Turks first cast Anchor the 18 of May 1565. Between the West and North is the Bay or Port of Melecca, where the great relief arrived the 7 of December following. Melecca regards the Island of Goza, and in the streight or channel between both are the Isles of Cummin, and Cuminat. This part of the Isle about Melecca is almost divided from the rest, by the Golfe or Port of the Saline Vecchie, or old salt pits towards the East; and that of Muggiara towards the West; and if the Turks had seized the pass which is between them, this assistance had proved vain. Next to the Golfe of the old Saline, is the Creek and Chapel of St. Paul, where according to common tradition he was shipwrecked: next is the Creek of new Salines, and the Creek of St. George, where the Turks disembarked their Ammunitions to serve to assault the Fort St. Elmo. And in fine, the Ports of Marza Massetto, and Marza grande are those where at three several times have been builded, and fortified three Cities, and divers Forts contiguous to each other. Il-Borgo, or the Bourg is 2000 paces in Circuit, the Isle of Sengle, 1500, each of 1000, or 1200 houses, the one and the other so well fortified, that they received 70000 Cannon shot, and sustained an incredible number of assaults of 60 or 70000 Turks. The Arsenal for the Gallies is yet in the Bourg, but there resides there only Malteses, and Mariners, and in the Isle of Sengle Mariners and Soldiers of Fortune.

The great Master and the Knights reside at present in the City of Valetta, which is now by much the most considerable of these Cities, both for its force, the advantage of its situation, and the beauty of its publick and private buildings. It is built upon Mont St. Elmo, which forms a languet of Land all of a Rock; and between the Ports of Marza Massetto, and Marza grande commanding on all sides, and into all parts of the one and the other Port, and its ditches to the landward, which are cut out of the Rock, which are exceeding broad, of a very great depth, strongly flankt, and well fortified. The Walls are strong, joyn to the Rock, and are about 60 foot high, and are well provided with Guns, &c. against any occasion. It contains above 2000 houses, which are for the most part uniform, builded of Free-stone; they are commonly two stories high, flat at top, and with Terrasses. The Market place is spacious, from whence several fair Streets do take their rise; to every house there is a Cistern to preserve water for their occasions; besides these houses there are several stately Structures, as the Great Masters Palace, which is a gallant Edifice, having a Tower which overlooketh the whole Island; the Hall or Chamber of Assemblies where they sit in Council, is curiously adorned and painted, wherein their Fights both by Sea and Land, as well at home as abroad, are lively represented; and this as also the Armory, which may on a sudden Arm 20 or 25000 men, are in the Great Masters Palace; then the Churches of St. Paul, and St. John Patron of the Order, the one the seat of a Bishop, and the other of a Prior, are magnificent; likewise the seven Alberges of the Knights like to many Palaces, where the Commanders of the seven tongues treat the Cavaliers at the expence of the Order. The Arsenal near Porto Reale is as well furnished with all sorts of Munition as any in Christendom. Also the Hospital of St. Johns towards the Castle of St. Elmo doth merit fame, not only for its buildings which are curious, but for the entertainment there given to those that fall sick, where the Knights themselves lodge when sick or wounded to receive cure, where they are exceeding well attended, have excellent good dyet, served by the Junior Knights in silver, and every Friday visited by the Grand Master, accompanied with the great Crosses: a service which was from the first institution commanded; and thereupon called Knights Hospitallers. Here are, as Sandys saith, three Nunneries, one for Virgins, another for Bastards, and the third for penitent Whores.

The Isle hath oft withstood the fury of the Turks.

The residence of the Great Master.

Castle of St. Elmo.

The Castle of St. Elmo is at the end of the City of Valetta towards the Sea, and at the opening of two Ports. During the siege of Malta it was taken, and sacked by the Turks, after having wasted 18000 Cannonshot, given divers assaults, and lost 4000 men of their best Militia, among others Dragut, one of their most famous *Coursiers*. The Christians lost 1300 men among whom many *Knights*. But this Fort was restored to a far better Estate than before; and is separated from the City only by a ditch cut likewise in the Rock; on the other side, and on the point of the Borgo is the Fort of St. Angelo; and likewise above the Borgo, and the Isle of Sengle, have been made new works to hinder the Turks from lodging there.

The Isle very strong and well provided for War.

Besides these three Cities, and the Forts about them, the ancient City of Malta, *Medina*, is in the middle of the Island, on an easie ascending hill, and in an advantageous situation. The Turks assaulted it in 1551 but soon retired. The Bishop of the Isle hath here his residence, and near the City is yet the *Grotte* and *Chapel* of St. Paul, where they believe he preached, and where he lay when he suffered shipwreck, and this place is of great account among them. All these Cities and Forts have 250 or 300 pieces of Cannon on their Rampart; and their *Magazines* are so well provided with Powder, Shot, Wood, Basket, Salt-meats, and all Provisions, and Ammunition, that they call it *Malta Flor del Mondo*, Malta the Flower of the World: being provided alwaies with Ammunitions and Provisions for a three years siege; yet this is to be understood, not only because of its Fortifications, and Ammunitions, but likewise because of its force, and the resolution of its *Knights*.

The Order of Knighthood first instituted.

This order of Knighthood according to Sandys, received their denomination from John the charitable Patriarch of Alexandria; though vowed to St. John Baptist as their Patron. Their first seat was the Hospital of St. John of Jerusalem, built by one *Gerrard*, at the same time when the Europeans had something to do in the Holy Land, where they received such good success, and became so famous that they drew divers worthy persons into this society: which by Pope *Gelasius* the second, was much approved of. He saith, that one Raymond was the first Master of this Order, who did amplify their Canons, and entituled himself *The poor servant of Christ, and Guardian of the Hospital in Jerusalem*; and at the allowance of one *Honorius* the second, were apparelled in black garments, signed with a White-Cross; this Order we have said began at Jerusalem, and at first meddled not but with the Government of the Hospital of St. John, and were called *Fryers Hospitaliers*, or simply *Hospitaliers*, as those of the Temple *Templers*; but when these *Hospitaliers* were constrained to make profession both of Hospitality and Arms, they were called *Knights Hospitaliers*, or *Knights of the Hospital of St. John of Jerusalem*; after the loss of Jerusalem, they held their convent in the City and Forts of Margatt, then in *Aicre* or *Protonaido*; and all the Latine Christians being driven from the Holy Land, and from *Souria*, they retired into Cyprus. But during their stay in Cyprus, they gained Rhodes, and established themselves there so powerfully, that they were called *Knights of Rhodes*. Margaret was taken from them in 1285. *Aicre* in 1291, little less than 200 years after Godfrey of Bullion had conquered the Holy Land, and this order began before; after the loss of *Aicre* they lived in Cyprus from 1291 to 1309. in which year they took, and settled in Rhodes, and maintained it more than 100 years, sustaining four sieges, till in 1522 Sultan Solymán became Master of Rhodes; they then retired into Europe, now into one place, and then into another, and in fine to Malta, which Charles the fifth gave them in 1530. with some little neighbouring Isles, as likewise the City of *Aripoly* in *Barbary*, which they could keep no longer then 1551. that place being too far engaged in the Enemies Country. These *Knights* are of divers Nations, and are divided into eight Tongues, to wit of Province, of Auvergne, of France, of Italy, of Arragon, of England, of Germany, and of Castile; so that the three first are in France, and the last in Castile; each Tongue contains many *Priories*, and each Priory many *Commanderies*; these three Tongues which are in France, have near 300 *Commanderies*. The other five Tongues which are in Italy, Arragon, England, Germany, and Castile, made near 400. but

These Knights oft forced to remove their habitations.

but there are no more in England, the Kings of England when they confiscated the goods of the Church, having likewise seized the goods and *Commanderies* of the *Knights of Malta*; and in Germany a part of these *Commanderies* being fallen into the hands of Lutherans, and Calvinists, serve no longer; so that at present France alone furnishes little less than half the *Commanderies* of Malta.

And it hath been observed that from the first establishment of this Order, unto this very present, of 27 great Masters, there hath been 37 French, only 4 or 5 Italians, 4 or 5 Spaniards, and 1 whose Nation and Tongue the History could not observe; but apparently the most part were French, since this Order began by the French; of these 34 known, 12 were in the Holy Land, and in *Souria*, 13 in Rhodes, and 9 in Malta unto Father Paul of Lascaris; of every one there is a Grand Prior, who lives in great reputation in his Country, who orders the affairs of their Order; and for England, St. John by Glarke, well in times past was a mansion of the Grand Prior. There are several Councils among these *Knights*, as that for deciding of differences which may happen among them; the Council of War, the General Chapter, which may augment, or moderate the Authority of the great Master, renew the Ordinances and Government of the Religion, or their Order, and which is held every five years.

The Ceremonies used in Knighthood are these which follow: first being clothed in a long loose garment, he goeth to the Altar with a Taper in his hand of White Wax, where he kneeleth down, and desires the Order of the Ordinary; then in the name of the Father, the Son, and the Holy Ghost, he receiveth a sword, therewith to defend the Catholick Church, to repulse and vanquish the enemy, to expose himself to death for the Faith, to relieve the oppressed, and all by the power of the Cross, which is denigned by the cross knit, then is he girt with a belt, and thrice struck on his shoulders with his sword, which signifies that he is cheerfully to suffer all afflictions for the honour of Christ: who taking it of him, flourisheth it aloft three times, as a provocation to the adversary, and then sheatheth it again. Then he that gives him Knighthood, doth exhort him to get true honour by laudable and courageous actions, to be vigilant in the Faith, &c. then two other *Knights* of the said Order, do put on a pair of gilt spurs, which doth signify that he should do no ignoble action for gain, and to value Gold no more than dirt; and thus with a Taper in his hand he goes to Mass, where he is excited to Hospitality, to works of Piety, redemption of Christian Captives, &c. Also he is asked whether he is resolved to live among them, to quit the Authority of secular Magistracy, to revenge their injuries, whether he be of any profession, whether a freeman, joylied in Matrimony, or vowed to another Order; and having answered thereunto, upon the receipt of the Sacrament he vows in this order: I vow to the Almighty God, to the Virgin Mary his immaculate Mother, and to St. John Baptist, perpetually by the help of God, to be truly obedient to all my superiours, appointed by God and this Order; to live without anything of mine own, and without to live chastly; which done he is received as a member of them; besides other prayers, they are commanded to say daily 150 *Pater-nosters*, for such as have been slaves in their Wars. None are admitted to this Order, but those who can prove their Gentility for six descents, which is examined and approved by the *Knights* of their Nation; they remain a year upon approbation, before they are admitted into the Society, where they come very young, that they may the sooner come to a *Commendum* at home. Their habit as we noted before, are black Cloaks, with large white Crosses of fine linnen set on the shoulder place; but in time of War they wear Mandilions of Crimion with the said White Crosses set behind and before, and about their necks they wear a Riband with a branch of the Cross. If one of these *Knights* be convicted of a Capital offence, he is in the first place publicly degraded in the Church of St. John, where he received his Knighthood; also strangled, or thrown into the Sea. There are of these *Knights* 1000, whereof 500 alwaies reside in this Island; the other 500 dispersed throughout Christendom, at their several Seminaries, which upon any

Their Government.

The Ceremonies performed in making these *Knights*.

any summons are to make their personal appearance; every Nation do feed by themselves in their several *Alberges*, and sit at table like *Friers*. Of these there be 16 of great authority (*Councillors of State*), called the *Great Crosses*, out of whom the Officers of their Order, as the *Marshall*, the *Admiral*, the *Chancellor*, the *Master of the Hospital*, &c. are chosen, and who together with the *Master* punish the transgressors as aforesaid. Now when the *Great Master* happeneth to die, they suffer no vessel to go out of the Land, until another be chosen, lest the *Pope* should intrude on their election, which is thus performed. The several *Seminaries* nominate two *Knights*, and two also are nominated for the *English*; and these 16 from among themselves chuse 8, and these 8 chuse a *Knight*, a *Priest*, and a *Friar*, *Servant*, and they three out of the 16 *great Crosses*, elect the *Great Master*, who being thus chosen, is stiled *The most illustrious and most reverend Prince*, the *Lord Frisr A.W.* *great Master of the Hospital of St. John of Jerusalem*, *Prince of Malta and Goza*. The *Great Master* being thus chosen, and received with these and many other noble Ceremonies, hath a great power over all the *Commanders and Officers of the Order*; he assembles the *Councillors*, calls the *Officers of Justice*, who exercise in his Name, and execute under his Seal; he *Coins money*, disposes of *Treasure*, *imprisons*, and sentences the *faulty*, pardons the *condemned*, creates *Knights of Grace*, confers even to the eighth dignity of the *Great Cross*, &c. In the *Council*, and at *Table* he sits under a *Canopy of State*, and is bravely attended, and served by *Knights* according to their Order, and without Fee, and doth all the acts of *Sovereignty*, and hath a great revenue to support his Dignity.

Their posses-
sions.

Besides *Malta*, the *Great Master*, and the *Knights of Malta* possess the Isles of *Cumini*, and *Cumini* which are very little; *Forfola* or *Fursura*, which is but a *Rock*, (and when they would jest with any among them, or play on some young *Knight*, they call him *Prince of Forfola*.) The Isle of *Goza* of which the *Great Master* takes the title of *Prince*; this is the *Gaulos* or *Gaudos* of the *Antients*; and to this day called *Gausditch* by its *Inhabitants*, and *Gausdofch* by the *Moors*. It is about 6 or 8000 paces from *Malta*, and about 20000 paces in Circuit, its form approaching to an *Oval*. Its *Fortress* is on an uncommanded hill, and the *Town* beneath it; all the Isle though mountainous is peopled not by *Villages*, but by *Hamlets*, and *houses* scattered here and there, the Air being very good, and the land watered with many streams. It may assist *Malta* with its *Corn*, *Fruits*, *Muttons*, *Hares*, *Fowl*, *Honey*, &c. they take here excellent *Faulcons*; and that which is presented to the *Vice-Roy of Sicily* in the name of the *Great Master of Malta*, and for *Malta*, likewise those which are presented to the *King of France*, are for the most part taken here.

This Isle of *GOZA* was taken, and pillaged by the *Turks* in 1551, who carried near 4000 souls *Captives*, there remaining almost as many. At present it is restored, and the *Castle* well fortified, and all the approaches of the Isle defended with some *Forts*. Its *Governour* is one of the *Knights* whom the *Grand Master* sends from three years to three years; the *Inhabitants* speak *Arab*, or *Moresco*, as at *Malta*, have the same manners, and are all *Catholicks*.

Likewise *LAMPEDOZA*, and *LINOSA* or *Limosa* distant from *Malta*, about 10000 paces, belong to these *Knights*, but both are esteemed desert. West of them and towards the *Cape of Bona* is the Isle of *Pantaleria*, which belongs not to the *Knights*, but to the *Catholick King*; but because we have not remembered it before, we will here speak a word of it. Its Circuit is about 30000 paces. Its City, and Port regard *Sicily* towards the North; and *Malta* towards the East. Above the City is a *Castle* or *Rock*, which nature hath made craggy, and inaccessible on all sides. The Land bears little *Corn*, quantity of *Pulse*, and *Kitchen-herbs*; produceth abundance of *Cotton*, *Anniseeds*, *Figs*, *Melons*, *Capers*, and excellent *Grapes*, &c. The manners, habit and tongue of the *Islanders* retain much of the *Moors*, yet they are all *Catholicks* like to *Malta*, and under the *Vice-Roy of Sicily*. In the midst of the Island, and in a *Cave* is a *Pitt*, which exhales continually an obscure vapour, which spreading it self on all sides on the *Rock*, dissolves into water, and distills with such abundance, that

that it furnisheth all the *Inhabitants* have need of not only for their drink, and other uses, but for their *Beasts*; nor is there any other fresh water in the Isle, the Land being dry, reddish, and so hot that a naked foot can scarce suffer it.

For the rest the *Knights of Malta* are always in Arms against the *Moors*, *Mahometans*, and all the *Pirates* of the *Mediterranean Sea*, and by their expeditions with those few *Gallies*, they have delivered out of their hands a great number of *Christian Captives*, reduced many *Mahometans* to the *Christian Faith*, maintain their Arms in good reputation, and on all occasions which present themselves, whether of their own, or with other *Princes of Christendom*, they freely employ and venture both their *lives* and *goods* in favour of *Christians* in general and particular.

But it is time to finish *Africa*, and to say that if we would have believed certain Authors among the *Antients*, this *Africa* had been represented to us with unsupportable heats, unsufferable drougths, fierce and cruel Beasts, perfidious Men, horrible and frightful Monsters, whereas time, which daily discovers things unknown to the *Antients*, hath made us see that the greatest heats of *Africa* have some refreshments; that the driest sands have some wells, some waters; that the vastest solitudes have some greenfields, some Fruits; that the Beasts are not so dangerous, but that Men may defend themselves from their fury; nor the Men so faithless, but that they have Commerce and Society among themselves, as also with Strangers; that their *Dragons*, *Serpents*, *Griffons*, &c. are for the most part imaginary. And moreover, the generosity of its *Lions*, the docility of its *Camels*, the Feathers of its *Estriches*, the odour of its *Givets*, the swiftness of its *Barbes*, the agility of its *wild Asses*, the greatness of its *Elephants*, the strength of its *Eagles*, the diversity of its *Parroquets*, and the wantonness of its little *Monkeys*, &c. recompence the mischief which other Beasts may do. And though there are as yet some people fierce, and Man-eaters, the most part of the others are very ingenious and tractable. The *Egyptians* have long since sufficiently made known their cunning in *Sciences*, *Arts*, and *Arms*, so have the *Carthaginians*, &c. and the *Antients* esteemed the *Ethiopians* the most innocent and justest men in the world, believing the *Gods* sometimes banqueted with them. Besides there are many particulars worthy of observation in *Africa*; what City was ever fairer, or more magnificent than *THEBES*, in the higher *Egypt*? Than *MEMPHIS* in the middle? Or *ALEXANDRIA* in the lower? Out of *Egypt*, what City was ever richer, more powerful, or more proud than *CARTHAGE*, except *Rome*? And at present *FEZ* is so splendid, that there is no City in *Europe* to be compared with it; though many believe it not to compare to *CAIRO* in *Egypt*: Among the Seven Wonders of the World, some place three in *Egypt* alone, the *Statue of MEMNON* at *Thebes*, the *PYRAMIDES* near *Memphus*, and the *PHARUS* of *Alexandria*.

Not only these beautiful Works, and fair Cities, not only the infinite quantity of *Gold*, and other *Metals*, *Precious stones*, *Grains*, *Fruits*, *Spices*, *Drugs*, *Wines*, *Oyls*, *Sugars*, *Honey*, *Wax*, *Cordovants*, *Amber*, *Ambergreece*, *Elephants-teeth*, *Estriches-feathers*, *Saffron*, *Coral*, *Civet*, *Musk*, *Incense*, *Coffee*, *Capers*, *Olives*, *Ivory*, *Silk*, *Cotton*, *Flax*, &c. of which they make *Velvets*, *Silks*, *Damasks*, &c. a thousand several *Manufactures* which are found there, ought to make us account *Africa* very considerable: but its extent which is little less than *Asia*, twice as great as *Europe*. Its position is in the Southern part of our Continent; the South is esteemed after the East, before either North or West: It was the portion of *Cham*, second Son to *Noah*, which may make us judge it the second in greatness and goodness. Its first *Monarchies* have been known before those of *Europe*; some will say before those of *Asia*. *Arts*, *Sciences*, *Letters*, and *Laws*, have been in great reputation here, before they passed into *Greece* or the rest of *Europe*.

Knights wait
in Wars.

Commodities
of Africa.

<p>the ARCTIC K LANDS, as it is called, where there shall be CANADA, or NEW FRANCE, whose chief parts and people are those of</p>	<p>Island Groenland, North Wales, South Wales, Esfloriland, Saguanay, Canada, Acadie, New England, Mary Land, Virginia, Carolina, The Hurons, Isle of Bermudas, Florida, Mexico, Panuco, Mechoacan, Thascala, Guaxaca, Tabasco, Jucatan, Gudalajara, Xalisco, Chiametlan, Cullacan, Cinaboa, Los Zacatecas, New Biscay, Quivira, Aniño, Cibola, California, Guatemala, Vera Pax, Soconusco, Chiapa, Honduras, Nicaragua, Costarica, Veragua, Cuba, Jamaica, Hispaniola, Soana, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, New Andalousia, Paria, Caribbes, Guiana, Popayan, Granada, Peru, De los Quixos, Palamores, Lima, De la Plata, Chili, Magellanick Land, St. Vincent, Rio Janieto, Spiritu Sancto, Porto Seguro, los Illeos, Baya de los Sanctos, Seregippe, Fernambuco, Tamaraca, Parayba, Rio Granda, Siara, Maranhan, Para, Paraguay, Chaco, De la Plata, Tucuman, Urvaig, Parana, Guayr,</p>	<p>Bellested, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>
<p>SEPTEN- TRIONAL, which may be divi- ded into</p>	<p>MEXICO with its Provinces and chief pla- ces of</p>	<p>Bellesed, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>
<p>AMERICA CA as it is divided into</p>	<p>GUADALAJARA RA with its Provinces of</p>	<p>Bellesed, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>
<p>PERUVIA- NE where three shall be</p>	<p>GUATEMALA with its Provinces, &c. of</p>	<p>Bellesed, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>
<p>MERIDI- ONAL, which may be divided into</p>	<p>PERU with its Audi- ences of</p>	<p>Bellesed, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>
<p>BRAZILI- ENE, where there shall be</p>	<p>BRAZILE with its Capitaines, or Go- vernments of</p>	<p>Bellesed, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>
<p>PARAGUAY or, RIO de la PLATA, with its Provinces, &c. of</p>	<p>PARAGUAY or, RIO de la PLATA, with its Provinces, &c. of</p>	<p>Bellesed, Beareford, Sea horse spring, Hudsons Bay, Hope advanced, Quebec, Bill 100, Mont. Real, Martengo, Boston, Marys town, James town, Charles town, St. Peter, Southampton, St. Hellens, Mexico, Panuco, 21 Ti 100, Mechoacan, Thascala, Antequera, No. Ich, de la victoria, Merida, Guadalajara, Compostella, St. Sebastian, St. Michael, St. John, Zacatecas, St. John, St. Fee, Aniño, Cibola, Port de Monterey, St. Jago de guad. mala, Vera Pax, Gueyerlan, Cui dad Real, Valladolid, Leon, Carrago, la Concepción, St. Jago, Sevilla, St. Domingo, St. Germaine, Panama, Carthagena, St. Martha, Rio de la Hacha, Venezuela, Comana, Macureguara, Taupuranamed, Macurewaray, St. Fee de Antiochia, St. Fee de Bogata, Quito, Bacla, Loyola, Lima, de la Plata, Copiapo, St. Phillip, Sanctos, Sebastian, Spiritu Sancto, Porto Seguro, Los Illeos, St. Salvador, Seregippe del Rey, Olinda, Tamaraca, Parayba, De los tres Reys, Siara, Junipara, Para, Paraguay, Chaco, Assumption, St. Jago del Estera, la Concepción, St. Ignatious, Quidad Real.</p>

A New Mapp of AMERICA SEPTENTRIONALE

*Designed by Monsieur Sanson Geographer to
the French King, and Rendered into English,
and Illustrated by Richard Blome By his
Majesties Especiall Command.*

London.
Printed for Richard Blome





NEW =
SOUTH =
MEXICO

Nublada

Roca Partida

SEA

(Francis Lamb Sculp)

240

245

250

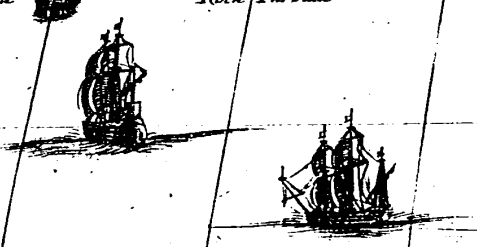
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AMERICA.



MERICA is a Continent different from that wherein we inhabit, or which we call Ours; for the surface of the *Globe* being described into two *Hemispheres*, divided by the first *Meridian*; *America* is in that *Hemisphere* which is opposite to ours.

In 1492, and some succeeding years, *Christopher Columbus*, a *Genouese*, for and in the name of *Ferdinand* King of *Arragon*, and *Isabella* Queen of *Castile*, made divers Voyages into the Islands which are before this Continent; and discovered part of the Coasts of the Con-

The Voyages
of *Columbus*,
Cabral, and
Vesputius
into *America*.

continent. In 1501 *Alvares Cabral*, for and in the name of *Emanuel* King of *Portugal*, Navigating along the Coast of *Africa*, on a Voyage to the *East-Indies*, some Eastern Winds carried him so far to the West, that he discovered the Coast of a main Land, which was afterwards called *Brazil*; where a little after *Americus Vesputius*, a *Florentine*, was expressly sent with a particular charge to discover this Country: In which he was so happy, that his name was given to that part of the Coast which he discovered; and in fine, to the whole Continent. From these Voyages of *Columbus*, *Cabral*, and *Americus Vesputius*, the *Spaniards* pretend to be the first who discovered, or caused to be discovered, and gave knowledge of this Continent.

The *Greeks* and *Latins* have given fair testimonies, that the Ancients have had some knowledge of *America*. *Plato* in his *Timæus*, and in his *Critias*, calls it the *Atlantick Isle*, and esteems it as great or greater than *Asia* and *Africa* together. It seems that *Plato* (or *Solon*, or the Priest of *Egypt*, &c.) had knowledge of the greatness, situation, and form of the two parts of *America*; so well they agree to *Asia* and *Africa*: the Northern *America* with *Asia*, the Southern with *Africa*.

America
known by the
Ancients.

AMERICA is almost divided into two parts, of which one is between the *Equator* and the North; the other, in regard of us, is towards the South, and part under the *Equator*.

America
bounded.

After *Plato*, *Theopompus*, either in his *Treatise of Wonders*, or in his *History*, makes mention of another Continent besides ours, and touches divers particulars: Among others, that its greatness is so vast that it was not wholly known; that its Men were greater, stronger, and lived longer than we; that

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they

they had *Gold* and *Silver* in so great quantity, that they made less account of it than we do of *Iron*: That they had a great number of Cities, and among others two very great ones, and of Customs much different; the principal aim of the one being to War, and the other to Religion; which I esteem agreeing with *Cusco* and *Mexico*, which we have so found when first known to us; *Mexico* more inclined to War, and *Cusco* to the adoration of its Divinities.

AMERICA having been known to the Ancients under divers names, and all these names preserved till now, there remains to know from whence the People of this *America* should descend, whether from *Europe*, *Asia*, or *Africa*. It is to be believed, that the first of our Continent which were carried into *America*, were so either by chance or by force; the Eastern Winds having driven them from the Coast of *Africa* or *Libya*, where they failed, and carried them so far into the West that they have found these Lands.

And it is likewise to be believed, that of those which have been so carried, some have been unfurnished of Victuals for so long and impremeditated a Voyage, and so have been constrained to eat some among them to preserve the rest, as others since have done. And thus *America* may have been peopled by divers Nations, and at divers times, and according to the Parts from whence they were, according to the hunger and necessity they suffered upon the Sea, they became more or less barbarous. And that some have been carried by chance or force from our Continent to the other, we may judge both by Ancient and Modern Histories. *Diodorus Siculus* makes mention of certain *Phœnicians*, (*Aristotle* had said almost the same before of the *Carthaginians*) who sailing along the Coast of *Africa* or *Libya*, were carried far into the *Occidental* Ocean, where they found a very great Isle, distant from our Main Land many days sail, and the Country as beautiful as that of *Toscany*, so that some of *Carthage* would here have settled; but that the Republick prohibited any more to pass, fearing lest it should weaken their Estate, commanding those which were passed to retire, and abolishing as much as they could the knowledge of their Country; yet with design to retire thither, if they should become so unfortunate as to fall under the *Romans* subjection. Those particulars which Authors apply to this Isle, agree better with *America Meridionalis*, which is almost an Isle, than with the Isles on this side it.

Besides these Authorities of the Ancients, the accident which arrived to *Alonso Zanches de Guelva*, in *Adalouffe*, or whatever other Pilot he was, who landing at the *Madera*, where was *Christopher Columbus*, who told him how he had been carried by force into the West, which he had discovered, and how he had returned: And the like accident which happened to *Cabral* in 1501, (as we have already said) makes it sufficiently appear how the same thing may have hapned to other Saylor; and particularly to those Nations on this side, which lie upon the Ocean, as the *Moors*, *Spaniards*, *Celtes*, and *Bretons*, &c. And those who traded on the Ocean, as the *Phœnicians*, *Carthaginians*, and *Tyrrhenians*; and this is the more easily, because between the two *Tropicks*, the Eastern Brises or Winds do for the most part blow, and easily carry, nay sometimes force Ships from East to West. It is true, that it is hard to turn from East to West by the same course: And possibly from these two so different things the Poet took occasion to say,

Facilis descensus Averni;
Sed revocare gradum superiusque revertere ad auras,
Hoc opus, hic labor est.

Understanding it easy to descend from our Continent into the other, which we esteem the Lower Hemisphere; but hard to return from that to ours, which we esteem the Higher: the means to return with least difficulty not being found out but with time; and after having (and that at divers times) essayed all courses, which is, by disengaging themselves from between the *Tropicks*, which some attribute to *Pedrius de Avila*, who about the year 1514 began to give

Rules

How *America* became first peopled by those of our Continent.

Rules for the time of parting; and the course was to be held, to go from our Continent to the other: and likewise the time and course to return from the others to ours.

Since some have passed from this world of our Continent, and by our Coast into the other Continent: It may likewise be believed, that others have passed from the other Coast, that is to say, from *Asia*. Whence it comes that some believe, that the Inhabitants of *Peru* and *Mexico*, descend rather from the *Chinois* and *Japanois*, than from the *Europeans* or *Africans*.

But this subject will be too tedious to handle, let us therefore content ourselves to speak a word or two of this *America* in general, before we descend to particulars.

AMERICA considered in its whole Body, is part on this side, and part beyond the *Equator*: It stretches it self to near 54 degrees beyond, and extends it self to 80 or more on this side, which are more than 130 degrees of *Latitude*; our Continent not having much more than 100: But the breadth of *America* is very unequal, this Continent being composed of two great *Peninsula's*, almost divided the one from the other by the *Equator*; its breadth here is not in some places of above 30, 40, or 50 Leagues, though in other places 1000 or 1200, and possibly much more in *America Septentrionalis*, if the Land of *Jesso* be contiguous to it.

This Land of *JES SO*, or *TEDSO*, is between *America* and *Asia*, and we know not yet whether it joyn upon *Asia* or *America*, or make a Piece apart; if it be divided both from the one and the other, and that *New Denmark* and *Greenland* are upon it, as there is much reason to believe, it makes a Piece not less than the three parts of our Continent, or of the two of the other; but possibly it makes a third part of the other Continent: Let us proceed to the two parts of *America*, as they are esteemed and known at present.

AMERICA SEPTENTRIONALIS.

AMERICA SEPTENTRIONALIS, is that part of *America* which is not only the most Northern of the two *America's*, but likewise doth all lie between the *Equator* and the North; it extends it self from the 8th or 10th degree of *Latitude*, even beyond the *Artick Circle*; and if we comprehend the *Artick Lands* with *America*, it advances at least to the 88th degree of *Latitude*, which are 70 degrees for its height from South to North. Its length from West to East possesses near all the degrees of *Longitude* of the other Hemisphere, to wit, from about the 180th, where ours end, even beyond the 300th, which is the end of the other.

The *Mer del Nort* is on the East of it, the *Mer del Sud* on its West; towards the North its bounds are unknown, there being Land found even beyond the 80th degree of *Latitude*, with appearance that they extend yet farther towards the *Pole*: so that we cannot judge to what degree, or whether it be contiguous to *New Denmark* and *Greenland*, or whether it be in Islands; and on the South it makes *America Meridionalis*.

We will divide this *America Septentrionalis* into *Canadiana* and *Mexicana*. Under the name of *Canadiana* is understood that part of *America* which is about *Canada*, where the *English*, *French*, *Hollanders*, *Danes* and *Swedes* have divers Colonies: And under the name of *Mexicana*, that part of *America* which the King of *Spain* doth almost alone possess, and where he hath established abundance of Colonies, subdividing *Canadiana* into the *Artick Lands*, and *Canada* or *New France*; and *Mexicana* into *New Mexico*; and *Mexico* or *New Spain*.

Of these four parts, *Mexico* or *New Spain* is the most advanced towards the *Equator* and the South, the *Artick Lands* towards the North, the other two parts rest in the middle; *Canada* or *New France* towards the East, and *New Mexico* towards the West. The first is under and about the *Tropick of Cancer*,

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The bigness of *America*.

The situation and Land of *Jesso*.

The length and breadth of *America Septentrionalis*.

its bounds.

its division, according to *Mont-Santon*.

its situation

the second under or about the *Polar Circle*, the two others lie from 25 or 30 unto 60 degrees of *Latitude*; so that the first is within or very near the *Torrid Zone*, the second within or near the *Frozen Zone*, and the two in the middle quite in the *Temperate Zone*.

The first and most Southernly ought to be called *Mexico* or *New Spain*; *Mexico*, because *Mexico* is by much the fairest City, and the Dominion of the ancient Kings of *Mexico* extended over the best part of it: *New Spain*, because the King of *Spain* possesses near all of it, having established a great many Colonies; a *Vice-Roy*, divers *Archbishops*, *Bishops*, *Audiences*, and *Governments*: the Natives of the Country that are left, being almost all Tributaries to him.

Arctic Lands.

The second may be called the *Arctic Lands*, because it approaches the *Arctic Pole*, and is for the most part comprehended within the *Arctic Circle*: these are but little known. We understand well that they are divided by some *Straits*, and that it apparently consists in many and divers Isles, which hath been the cause a Passage hath been sought to go this way to *China* and the *East-Indies*. The Natives do here enjoy a full and entire liberty, the People of *Europe* not thinking it worth their pains to establish Colonies.

Canada, or New France.

Of the two middle parts, the most Easternly and nearest to *Europe*, ought to be esteemed under the general name of *Canada* or *New France*: of *Canada*, because in that particular Region the *Europeans* first Landed; of *New France*, because the *French* did first establish themselves here before any other *Europeans*. The most Western and farthest from *Europe* may in general be called *New Mexico*, because the *Spaniards* of *Mexico* or *New Spain* discovered it not till after they had been sometime settled in this other.

Of these four parts of *America Septentrionalis*, to wit, *Mexico* or *New Spain*, *New Mexico*, *Canada* or *New France*, and *America Arctica*: *New Spain* is washed by *Mer del Nort*, and *Mer del Sud*: *America Arctica* likewise by both Seas; *New France* only by *Mer del Nort*, and *New Mexico* only by *Mer del Sud*.

These four great parts are subdivided into many less, which we call *Regions*, *Peoples*, *Provinces*, &c. We will observe the chief of them the most clearly and succinctly as possibly we can; but because *New Spain* touches on *America Meridionalis*, we will begin our *America Septentrionalis* by the *Arctic* and *New France*; so proceeding to the one and the other *Mexico*, that we may pass in order to the parts bordering on *America Meridionalis*. And likewise, because the *Arctic Lands* of *America* are very little known, and that we cannot judge to make a particular discourse of them, we will content our selves to speak something here before we pass to the other parts.

That part of *America* which is comprised for the most part between the *Arctic Pole* and *Circle*, or which at most descends unto the 60th or 55th degree of *Latitude*, is named according to our method, *America Arctica*. In all this part we know only some *Coasts* and *Gulphs* of that which is most towards *Europe*: There we have the Isles of *Iseland* and *Groenland*, we might likewise put *Shetland*, which we know not whether Isles or parts of the New Continent, as we are likewise ignorant of all the rest of *America Arctica*.

Island.

Its Inhabitants

ISELAND, subject to the King of *Denmark*, is 150 Leagues long, and little less than 100 broad. Its Inhabitants are very lusty, and live above an 100 years; they scarce addict themselves to any thing but the feeding of their *Beasts*, and *Fishing*. The Coast toward the South is much better, and best inhabited. The Governour of the Island resides at *Bellested* on the Coast, *Scalhold* and *Holdon*, within Land, are *Bishops Sees*. The Mountains of *Hecla* and *Helga* often vomit Fire, though the Circle of the Pole *Arctic* passes over this Island, and incloses part of it in the *Frozen Zone*, leaving the other in the *Temperate*, if that can possibly be, which lies so contiguous and near to the *Frozen*; yet doth it not hinder them from enjoying many rare things in their Mountains, in their *Lands*, in their *Fountains* and *Rivers*, in their *Beasts*, and in their *Fish*. *Iseland* doth (in my Judgment) apparently answer to the *Thule* of the Ancients, though some Authors of the Country maintain the contrary.

GROEN.

GROENLANDT, that is, *GREENLAND*, hath been long known to those of *Iseland* and *Norway*. Account is made that one *Torwald*, and his Son *Errick* of *Norway*, passed into *Iseland* about the year 800; and that from *Iseland*, *Errick* and his Son *Lieffe*, passed a little after into *Groenlandt*, where they established some Colonies of *Norwegians*: And the same History saith, that *Lieffe* had some Combats with the Ancient *Sekreglingres* and Native Inhabitants of the Country, and that those of *Norway* held but a small part in the East Coast of *Groenlandt*, the *Sekreglingres* keeping the rest within the Country; and that what the *Norwegians* possessed and knew in *Groenlandt*, was not the hundredth part; but that there were divers People, governed by several Lords, of which the *Norwegians* had no knowledge.

Its Fertility

They say, that in several parts of *Groenlandt* there are Lands which bear as good *Wheat* as any Ground in the World; and *Chestnuts* so large, that their Kernels are as big as *Apples*; that the Mountains yield *Marble* of all sorts of colours; that the *Grass* for Pastures is good, and feeds quantities of great and small Cattle; that there are *Horses*, *Stags*, *Wolves*, *Foxes*, Black and White *Bears*, *Beavers*, *Martles*, &c. That the *Sea* is full of great Fishes, as *Sea-Wolves*, *Dogs*, and *Calves*, but above all of *Whales*; that the *white Bears* live more on the *Sea* than on the *Land*; and that as the Black ones feed only on *Flesh*; the *White* ones do on *Fish*, and are especially greedy of *little Whales*, which causes a great Antipathy between them and *Whales*, who pursue them wherever they can scent them: That their Fish *Marbvat* carrieth a *Tooth* or *Horn* so strong and long, that it fights against and pierces the *Whale*, as the *Rhinoceros* does the *Elephant*: and they assure us, that the *Horn* is of the same greatness, form, and matter, and hath the same properties as those which we here esteem in the *Unicorns*.

The Marbvat, a strange kind of Fish.

The *Norwegians* and *Danes*, who sometime since have passed into *Groenlandt*, say, that the Language of its Inhabitants is so different from that of *Norway* or *Denmark*, that there is little appearance they could descend either from the one or the other; and that if formerly there have been any Colonies of *Norwegians*, they are quite extinct. In 1636 the *Danes* which went thither to Trade, demanded by signs, if beyond that ridge of Mountains there were any Men; the *Savages* made them to understand, they were innumerable, higher, and stronger than they; and that they used great *Bows* and *Arrows*, and would not have any Commerce, nor suffer the sight of Strangers. The Habits of those with whom the *Danes* traded (some of which they brought into *Denmark*) were of Skins of wild Beasts, their Shirts of the Entrails of Fish, and their *Waistcoats* of the Skins of Birds with their Feathers.

Its Inhabitants

These same Relations make mention of an Old and New *Groenlandt*; this descending towards the South, the other mounting towards the North; but that some years since the North Seas have been so loaden with *Ice*, that the first ones not being melted before Winter, and the other having continued from time to time, to add to them, and lie in heaps one upon the other, the *Sun* in the end hath not had power to break them, and in succession of time this way hath been stopt up, and the communication of *Iseland* with Old *Groenlandt* lost.

CANA.

The ARCTIC LANDS,
called AMERICA ARTICA,
with its chief places and such
are,

ISLAND,	Bellefied, Schalhod, Holdon, Beareford, Mudder Point, Trime Point, Warwick Foreland, Warwick Sound, Cape Farwel, Resolution Isle, Seahorse Point, Cape Pembroke, Hudsons Bay, James Bay, Cape Henretta Marie, Sir Tho. Smiths Foreland, Merchants Isles, Cape Charles, King James Foreland, Cape Prince Henry, Hope advanced, Ganse Bay, Slapors Haven, Clapnurs Bay, Orang Bay, Hollandische Bay.
GROENLAND,	Quebeck, Tadoulac, Bay Savage, Brett, Port de Quartier, Port de St. Nicholas, Chichekedec, Port Neuf, Jaus Couderes, Isle of Orleans, Sillery, Mont Real, Richelieu, Point Verre, Croisepaqueat, Cape de l'Esperance, Assumption Isle, Isle of Plate, Isle of Birds, Isle of Ramee, New-found-land, Isle of Brien, Isle of Cap. Breton, Isle of St. John, Martengo, Macomode, Palpay, Port de Rosignol, Cape de Sable, Port Royal, Cape de Mines, Isle of Forchu, de Sable.
NORTH WALES,	Boston, Plimouth, Charles-Town, Dorchester, Cambridge, Utielands Isle, Long Isle, Maries Town, Calverton, Herrington.
SOUTH WALES,	New York, James Town, Elizabeth Town, Dales Giff, Wicocomoco, Pouhatan, Bermuda, Secotam, Cape Henry, Smiths Isle, Isle of Paquirock, Isle of Croatan, Wokokon.
ESTOTILAND,	Charles-Town, St. Peter, St. Francis, Alexis, St. Michael, St. Joseph, Southampton, Harrington, Pagets, St. Hellens, Port Royal, St. Matthews, St. Augustine, St. Jago.
SAGUANA,	
CANADA,	
ACADIE,	
NEW ENGLAND,	
MARY-LAND,	
NEW YORK,	
VIRGINIA,	
CAROLINA,	
The HURONS,	
Isle of BERMUDEs,	
FLORIDA,	

CANADI-
ANE; In
which may
be confi-
dered

CANADA, or NEW FRANCE,
with its chief Parts and Places;
and such are those of

CANADA,

OR

New France.

Under the name of *CANADA*, or *New France*, we esteem that which is on both sides the great River of *Canada* or *St. Lawrence*, with the Isles that are before its Mouth, unto, and so far as this River is known; and from the Gulphs and Streights of *Davis* and *Hudson*, unto *New Spain* or *Mexico*. In this extent we have the Isles of *New-found-land*, *Terra di Labrador*, *Canada*, which communicates its name to the rest, *Acadia*, *Saguenay*, the *Iroquois*, the *Hurons*, the *Algonquins*, with about a hundred other sorts of people, whose names are known.

The Isles of *NEW-FOUND-LAND*, or according to the *Biscains*, of *Bacallaos*, that is, of *Cod-fish*, are so called by reason of these Fishes here found in such great quantity, that sometimes they seem to hinder the sayling of Ships; in like manner are they found in the Gulph or Bay of *St. Lawrence*. Besides the *Cod-fish* here are other sorts of Fish in great plenty, as *Thornback*, *Ling*, *Salmons*, *Oysters*, &c.

The greatest of these Isles, and which commonly takes the name of *New-found-land* is 4 or 5 Leagues circuit. It is situate betwixt the degrees of 46 and 53 of *Northern Latitude*, and is severed from the Continent of *America* by an Arm of the Sea, and is distant from *England* about 600 Leagues. A Country ill-inhabited towards the East and South, the Inhabitants being retired farther within Land; but the *English* have of late settled some Colonies to maintain their Fishing-Trade. The Natives are of a reasonable good Stature, and well proportioned; but full-ey'd, broad-faced, beardless, and of an *Oker* complexion, not over ingenious; their Houses are very mean, and their Apparel and Furniture worse. The Country being for the generality reputed fertile, if well cultivated, and would yield good Grains; is enriched by Nature with plenty of *Fish*, *Fowl*, and *wild Beasts*, and is blest with a wholesome Air, though the rigour of the Winter season, and the excess of Heats in Summer do something detract from its due praise.

East of *New-found-land* is a great Bank, a thing as remarkable as any in all *Canada*. This Bank is much different from those which are covered with Water when the Sea is high; uncovered and dry on an Ebb: Saylor must shun such Banks like death. This, which we now speak of, is like a Country overflowed, always covered with the Sea, and having at least 20, 30, or 40 Fathom water, for the depth is unequal. Off from this Bank, on all sides, the Sea is no less than 200 Fathom deep; and yet this Bank is 200 Leagues long, 20, 25, and sometimes 50 broad. It is on this Bank that the *New-found-landers*, (that is, those Ships that go to fish for *Cods* of *New-found-land*) do for the most part stop and make their freight.

About

The manner of
Fishing.

About this great Bank, and more towards the Main Land than the Ocean, there are some others much less, but of the same nature. It is almost incredible how many Nations, and of each how many Sail of Ships go yearly to fish for these *Cods*, with the prodigious quantity they take; a Man being able to take 100 of them in the space of an hour. They fish with Hooks, which are no sooner thrown into the Sea, but the greedy Fish snapping the Bait is taken by the Hook, and drawn on Ship-board they lay him presently on a Plank; one cuts off his head, another guts it and takes out its biggest bones, another salts and barrels it, &c. Which being thus ordered, is hence transported by the *English* and other *European* Nations into all parts of *Europe*, as also into the other three parts of the World. They Fish only in the day time, the *Cod* (as they say) not biting in the night; nor doth this Fishing last all Seasons, but begins a little before Summer, and ends with *September*: In Winter the Fish retires to the bottom of the deep Sea, where Storms and Tempests have no power.

Another kind
of Fishing.

Near *New-found-land* there is another kind of fishing for the same Fish, which they call *dried Fish*, as the other *green Fish*. The ships retire into some Port, and every Morning send forth their *Shallops*, one, two or three Leagues into the Sea, which fail not to have their load by Noon, or a little after: They bring them to Land, lay them on Tables or Planks, and order it as the other; but after the Fish hath been some days in salt, they take it forth, exposing it to the Air and Wind, lay it again in heaps, and return it from time to time to the open Air till it be dry. That this Fish may be good, it must be dried in a good and temperate Air; Mists moisten it, and make it rot; the Sun hardens it and makes it yellow.

At the same time they fish for *Cods*, green or dry, the Fishers have the pleasure of taking *Fowl*, without going forth of their Vessels. They take them with a Line as they do fish, baiting the Hook with the *Cods* Liver; these Fowl being so greedy, that they come by flocks, and fight who shall get the Bait first, which soon proves its death: and one taken, the Hook is no sooner thrown out again, but another is catch'd in the like nature. But enough of these, and of *Cod-fishing*.

In the year 1623, Sir George Calvert, Knight, the *Principal Secretary of State*, and afterwards Lord *Baltimore*, obtained a Patent of part of *New-found-land*, which was erected into the Province of *Avalon*, where he settled a Plantation, and erected a stately House and Fort at *Ferry-land*, where he dwelt some time: And after his death it fell to his Son, the Right Honourable *Cecilius*, late Lord *Baltimore*, also Proprietor of *Mary-land*.

The River
Canada.

CANADA taken particularly, is on the Right hand, and towards the lower part of the great River; and its name is communicated both to the River and Neighbouring Country. This River is the largest of *America Septentrionalis*, and one of the fairest in the World: It is about 200 Fathom deep, and at its Mouth 30 Leagues broad. Its course (according to the report of those of the Country) is already known for 4 or 500 Leagues; and there is some likelihood that we may in the end discover, that the Lake which seems to be its head-Spring, disburthens it self into the Sea by two or three different courses; one towards us, which is that of *Canada*; another towards the West, and above *California*; the third towards the North, and into the *Christian Sea*; and that the Mouth of this may shew us the way we have so long sought, to go to the *East-Indies* by the West.

People with
whom the
French Trade.
Their Colo-
nies.

The People with whom the *French* trade here are the *Canadians*, the *Hurons*, the *Algonquins*, the *Attiquamegues*, *Nipissiniens*, *Montagnets*; those of *Saguenay*, *Acadia*, &c. And to this purpose they have divers Colonies on the great River at *Tadoussac*, at *Quebeck*, at *Three-Rivers*, at *Sillery*, at *Richelieu*, at *Montreal*, and without the Bay of *Chaleur*, at *Miscou*, at *Port-Royal*, &c. This Trade is only managed by Exchange; they give the Skins of *Bever*, *Otters*, *Marlins*, *Sea-Wolves*, &c. for *Bread*, *Pease*, *Beans*, *Plumbs*, *Kettles*, *Cauldrons*, *Hatchets*, *Arrow-heads*, *Pinchers*, *Coverlids*, &c. But to instruct them in Christianity, many *Ecclesiasticks* of Religious Orders have had divers

disburse-

disbursements, and residences; likewise an *Hospital* and *Seminary of Ursulines*: The *Jesuits* have the chief care of these Houses.

North of *Canada* is *ESTOTTILAND*, or *TERRA DE LA BRADOR* near *Hudsons* Streight; it is called sometimes the Land of *Cortereal*, and sometimes *new Britany* and however, it esteem it a part of *new France*; the Country is Mountainous, Woody, full of wild *Beasts*, well furnished with *Rivers*, rich in *Metals*, of a fertile Soil in most places, and would produce *grains*, *fruits*, &c. if its Inhabitants would give it tillage. South of *Canada* are *New England*, *New York*, *Maryland*, *Virginia*, and *Caroline*; of which in Order.

NEW ENGLAND, North of *Maryland*, according to the report of Captain *Smith*, hath seventy miles of *Sea Coast*, where are found divers good *Havens*, some of which are capable to harbour about five hundred sail of Ships from the fury of the *Sea* and *winds* by reason of the interposition of so great a quantity of small *Isles* which lie about the Coast to the number of about two hundred. And although it be seated in the midst of the *Temperate Zone*, yet the Climate is more uncertain as to *heat*, and *cold*, than those *European Kingdoms* which lie parallel to it. Yet the Air is found very healthful and agreeable to the *English*, which hath occasioned the settlement of divers Potent Colonies here who live very happily, and drive a considerable Trade for their provisions to our *American Plantations*, especially to the *Barbados*. This Country is inhabited by divers sorts of people, the chief amongst which are the *Bessabees* about the River *Renobscot*; and the *Massachusets*, a great Nation, and every one are governed by their particular Kings, and do much differ in *Customs* and *Manners* from one another, as they do in the other parts of *America*, living generally at variance with each other: Their chiefest riches is in their *Furrs* and *Skins* which they sell to the *English* in truck for Commodities; they are for the most part ingenious, well disposed, and with little pains would be brought to *Christianity*. This Country is for the generality of a fertile soil, is well watered with *Rivers*, hath plenty of *Fish*, as *Cod*, *Thornback*, *Sturgeon*, *Porpuses*, *Haddock*, *Salmons*, *Mulletts*, *Herrings*, *Mackerel*, *Plaice*, *Oysters*, *Lobsters*, *Crabs*, *Turtles*, *Cockles*, *Muscles*, *Clams*, *Smelts*, *Eels*, *Lampreys*, *Drums*, *Alewives*, *Basses*, *Hollibuts*, *Sharks*, *Seals*, *Grampus*, *Whales* &c. Here are great variety of *Fowl* as *Pheasants*, *Partridges*, *Pigeons*, *Meathcocks*, *Oxeyes*, *Geese*, *Turkeys*, *Ducks*, *Teal*, *Hens*, *Cranes*, *Cormorants*, *Swans*, *Brants*, *Widgeans*, *Sheldrakes*, *Snipes*, *Doppers*, *Blackbirds*, *Loon*, *Hum-bird*, with divers others too tedious to name. They have also great plenty of *Beasts* both tame and wild, as *Cows*, *Sheep*, *Goats*, *Swine*, and *Horses*; and for wild *Lions*, *Bears*, *Wolves*, *Foxes*, *Martins*, *Raccoons*, *Mooses*, *Musquasus*, *Otters*, *Bever*, *Deer*, *Hares*, *Coneys*, &c. Amongst the hurtful things the *Rattlesnake* is the most dangerous; and here are several sorts of stinging Flies which are very troublesome to the Inhabitants. Here are sundry sorts of trees, as the *Oak*, *Cypress*, *Pine*, *Cedar*, *Chestnut*, *Walnut*, *Fir*, *Asp*, *Elm*, *Asp*, *Alder*, *Maple*, *Birch*, *Sassafras*, *Sumach*, &c. also several *Fruit-trees*, as *Pomgranates*, *Maracocks*, *Pachamins*, *Olives*, *Apples*, *Pears*, *Plumbs*, *Cherries*, *Grapes*, with those common in *England*. And their ground also produceth *Potatoes*, *Carrots*, *Turrips*, *Parsnips*, *Onyons*, *Cabbages*, with most of the *Roots* and *Herbs* found in *England*, The soil being very agreeable for them. But the fruits are not found here so good as in *Virginia*, nor in *Virginia* as in *Caroline*, as lying more Southwards, and having the greater influence of the Sun: This Country affordeth several rich *Furrs*, hath *Iron*, *Amber*, *Pitch*, *Tarr*, *Masts*, *Flax*, *Linnen*, *Cables*, and *Grains* in great plenty. The *English* which now inhabit this Country are very numerous and powerful, having a great many Towns several of which are of considerable account, and are governed by *Laws* appropriate to themselves, and have their Courts of *Judicature*, and assembling together, each Town having two *Burgees* for the looking after the affairs of the Colony. And as to matters of Religion and Church Government, they are very strickt, and make a great show, being much of the stamp of the ridged *Presbyterians*. Amongst their Towns these are of chief note. i. *Boston*, commodiously seated for

Esotiland.

New England
described.The Native
Inhabitants.

Their Fish.

Fowls.

Beasts.

Trees.

Fruits.

Its Commodi-
ties.

Government.

Its chief
Towns.

Traffick on the Sea Shore; at present a very large and spacious Town, or rather a City being composed of several well ordered *streets*, and graced with fair and beautiful houses, which are well inhabited by *Merchants and Traders* men who drive a very considerable *Trade*; It is a place of great strength, having two or three hills adjoining, on which are raised *Fortifications* with great Pieces mounted thereon which are well guarded. 2. *Charles Town* seated on and between the Rivers *Charles* and *Misick*; it is beautified with a large and well built Church, and near the River-side is the *Market place* from which runs two *streets*, in which are divers well built houses. 3. *Dorchester*, an indifferent Town seated near the Sea. 4. *Cambridge* commodiously seated on a River, doth consist of several *streets*, and is beautified with two *Colledges*, and hath divers fair and well built houses. 5. *Reading* commodiously seated about a great Pond, and well inhabited. 6. *St. Georges Fort* seated on the mouth of the River *Sagadebeck*. 7. *New Plymouth*, seated on the large Bay of *Potusced*. With divers other Towns of some account, most of which bear the Names from those of *England*; but amongst the *Indians* are known by other names.

New York de-
scribed.

NEW YORK, formerly *New Netherland* is seated betwixt *New England* and *Virginia*; It is now called *New York* from his Royal Highness the Duke of York the Proprietor thereof, by grant from his Majesty. It is a Country of a fertile soil, is well watered with *Rivers*, and is found to produce the same *Beasts, Birds, Fowls, Fish, Fruits, Trees, Commodities, &c.* and in as great plenty as *New England*, so they need not be taken notice of here. This Country is also possessed by sundry sorts of people, not much unlike those of *New England*, and are very expert at their *Bow and Arrows*, which is their chief weapon of War, and found to be of a ready wit, and very apt to learn what is taught them; in their Religious *Rites* divers ceremonies are observed amongst them, and are said to worship the *Devil* whom they much fear; their *Priests* being little better than *Sorcerers*, who strangely bewitch those silly people. When any woman smothereth her self quick with child she keepeth her self chaste from man until her delivery, the like she observeth in the time of her giving suck, a strange Custom which our *European Dames* would not well relish; upon the least offence the man turneth away his wife, and marrieth again, and the Children begotten by her she keepeth; *Fornication* is here permitted; they are very dutiful to their Kings, they believe the transmigration of the soul, and concerning the Creation of the world have strange foolish opinions. They are much addicted to *sports, recreations, and dancings*, and observe *Festival times*. Their habit is but mean as the rest of the *Indians*, yet do they paint and besmear their faces with several colours, which they hold Ornamental; their dyet and *habitations* are also mean; Here is one very considerable Town now called *New York*, being well seated both for security, trade and pleasure in a small Isle called *Mahatan* regarding the Sea made so by *Hudsons River*, which separates it from *Long Island*: The Town is large containing about 500 well built houses, and for Civil Government it hath a *Major, Aldermen, Sheriff, and Justices of the Peace*, for security of the Town here is raised a *Fort* called *James Fort*, a place of considerable strength; The Town is Inhabited by *Dutch* as well as *English*; and hath a considerable Trade with the *Indians*, and is like to be a place of considerable Account.

Its Native In-
habitants.

Province of
Maryland de-
scribed.

MARYLAND, is South of *Virginia*, from which it is severed by the River *Potowmeck*. The Bay of *Chesoprak*, giving entrance to Ships into *Virginia*, and *Maryland* passeth through the heart of this Province, and is Navigable for about 200 miles, into which fall the Rivers of *Potowmeck, Patuxent, Severn, and Salsquehanough*, which lie on the West side of the Bay, and to the East those of *Choptanke, Potomoke*, with some others to the great improvement of the soil. The Country of late years since the felling the Woods, and the people accustoming themselves to *English dyet*, is very healthful and agreeable to their Constitutions few dying at their first coming, of the Countreys disease or seasoning; and as to temperature of the Air, the Heats in Summer nor the Colds in

Its soil.

in winter are offensive to its Inhabitants. The soil is rich and fertile naturally producing all such *Commodities* as are found in *New England*, and doth abound in the said several sorts of *Beasts*, and *Fowls*, both tame and wild; hath also the same *Fish, Fruits, Plants, Roots, Herbs, Trees, Gums, Balsams, &c.* but the *Fruits* are more excellent and in greater plenty; here *Mulberry trees* grow wild, and were the people industrious, the *Silk trade* might be soon brought to perfection, but their employment is altogether taken up in planting and ordering their *Tobacco*, which is the only and Staple *Commodity* of the Country which they vend for such necessities as they have occasion for. They yearly freighting about one hundred sail of Ships therewith. The Natives as to their *Complexion, Stature, Customs, Laws, Religions, Dispositions, Habit, Dyet, &c.* are much the same with the *Indians* in the other parts of *America*, and are of divers Tribes or sorts of People, and each governed by their particular King. This Province of *Maryland* is by Patent granted to the Right Honourable the Lord *Baltimore* and to his Heirs and Assigns, being absolute Lord and Proprietor of the same, having Royal *Jurisdiction* and *Prerogatives* both Military and Civil, as making of *Laws*, pardoning of Offences, conferring of Honours, Coyning of Money, &c. and in acknowledgment thereof paying yearly to his Majesty and his Successors two *Indian Arrows* at *Windfor Castle* on *Easter Tuesday*. This Province is severed into ten Counties, viz. five Eastwards, and five Westwards of *Chesopeak Bay*, and in every County there is held an inferior Court every two months for small matters, from which there lyeth Appeals to the *Provincial Court* at *St. Maryes*, and each County have their *Sheriffs*, and *Justice of the Peace*. The *English* which are reckoned about 16000 have begun of late to build some Towns, which 'tis hoped in few years will come to good perfection, as *Calverton, Herrington, and Harvy Town*; all commodiously seated for the benefit of Trade, and convenience of Shipping; but the principal Town is *St. Maryes*, seated on *St. Georges River*, beautified with several well built houses, where his Lordship *Charles Lord Baltimore*, hath his House, and where the general *Assemblies* and *Provincial Courts* are held, and publick Offices kept. But his Lordship's general Residence is at *Mattapany* about eight miles distant, where he hath a fair and pleasant house.

Trade.

People.

Division of the
Province into
Counties.

Government.

VIRGINIA is said to be first discovered by Sir *Francis Drake* (as indeed all this tract of Sea Coast) and was so named by Sir *Walter Raleigh* in honour of Queen *Elizabeth*, who then Reigned; but before it was brought to any perfection much time was spent with no small expence, and loss of mens lives. And about the Reign of *K. James*, a Patent was granted to certain persons, as a *Corporation*, and called the Company of *Adventurers of Virginia*; but upon divers misdemeanours and miscarriages about the year 1623, the Patent was made void, and hath been since free for all his Majesties Subjects to Trade unto. It is situate Southwards of *Maryland*, and hath for its Eastern limits the *Atlantick Ocean*. It is blest with a good Air, and the Climate of late since the clearing of woods is found very agreeable to the *English*, so that few die of the Country disease called *seasoning*. The soil is so fertile that an Acre of ground commonly yields 200 bushels of Corn, and is very apt to produce what is put therein, as *English Grains, Roots, Seeds, Plants, Fruits, &c.* besides those appropriate to the Country and other adjacent parts of *America*; and it is observed that their *Fruits* (which are in great abundance and of various sorts) for goodness may compare with those of *Italy* or *Spain*, which are esteemed the best in *Europe*. They have great abundance of *Beasts, Fowls, and Fish*, which I have taken notice of in *New England*, and their *Turkeys* are said to weigh about six stone; amongst their small *Birds* is the *Mock-Bird* which counterfeiteth the notes of all *Birds*, for which it is esteemed excellent. The *Commodities* which this Country doth or may produce, are *Flax, Hemp, Wood, Madder, Pot-Albes, Hopps, Honey, Wax, Rapeseed, Anniseed, Silk* (if they would make it *Mulberry Trees* there growing in so great plenty) several sweet *Gums* and excellent *Balsomes, Alooe, Iron,*

Virginia by
whom first de-
covered.

Its Bounds.

Its Fertility.

Its Beasts, Fowl
and Fish much
the same as in
New England.

Its Commodi-
ties.

Its Rivers.

Its chief places.

Its division in
to Counties.Its Situation
bounds.

The Proprietors.

Copper, several sorts of Woods, Plants, &c. used by *Dyers, Pitch, Tarr, Rosin, Turpentine*, sundry sorts of rich *Furrs, Elk-skins*, and other *Hides*, but above all *Tobacco*, which is their principal *Commodity*, and the standard by which all other *Commodities* are prized; but it were to be wished the *Inhabitants* would employ their time about other *Commodities* as well as *Tobacco*, and they would soon find the profit, and their *Tobacco* would not be such a drugg as now it is. This *Country* is well watered with several great and strong *Rivers* which loose themselves in the *Gulph* or *Bay* of *Chesapeake*, which gives entrance for *Shipping* into this *Country*, as well as to *Maryland*; and is a large and capacious *Bay* found very commodious for *Shipping*, being said to run up into the *Country* Northwards above 200 miles; amongst the *Rivers* those of most note are *Powhatan* now *James River*, found Navigable about 150 miles; *Pamunke* now *Tork River*, also large and Navigable about 60 miles; and *Rapahanock* which is long and Navigable about 120 miles; And near or adjoining to these *Rivers* for the conveniency of *Shipping* the *English* are seated, and have some *Towns*, the chief of which is *James Town* commodiously seated on *James River*, a neat *Town*, and beautified with well built *Brick Houses*, and here are kept the *Courts of Judicature*, and *Offices* of publick concern for the *Country*. Next to *James Town* may be reckoned *Elizabeth*, a well built *Town*, seated on the mouth of a *River* so called. Also *Dales-gift*, *Wicocomoco*, *Bermuda*, and others. The *Governour* of this *Country* is sent over by his *Majesty*, and the *Country* is governed by *Laws* agreeable with those of *England*; and for the better observing the same, the *Country* possessed by the *English*, is divided into the *Counties* of *Caroluck*, *Gharles*, *Glocester*, *Hartford*, *Henrico*, *James*, *New Kent*, *Lancaster*, *Middlesex*, *Nansemond*, *Lower Norfolk*, *Northampton*, *Northumberland*, *Rapahanock*, *Surrey*, *Warwick*, *Westmorland*, the *Isle of Wight*, and *Tork*, and in each of these *Counties* are held petty *Courts* every *Month*, from which there may be *Appeals* to the *Quarter Court* at *James Town*. As to the *Natives* which here *Inhabite*, they are much of the nature of those already treated of, so I shall omit them here. Only say that it is the *Habitation* of divers sorts of *Indians*, which have no dependance upon each other, being of particular *Tribes*, and having their peculiar *King* to govern them, every *Indian Town* being the *habitation* of a *King*, and these people do rather live at enmity than amity together.

CAROLINA a Colony not long since established by the *English*, and is that part of *Florida* adjoining to *Virginia*, in the *Latitude* of 36 degrees, and extendeth it self to that of 29, which makes it extreame Southern bounds; on the East it is washed with the *Atlantick Ocean*, and on the West it hath that large tract of Land which runneth into the *Pacifick Ocean*. It is a *Country* blest with a wholsom and temperate Air, the heat in *Summer*, nor the cold in *Winter* (which is so much as to check the growth of *Plants, Trees*, &c. the several *fruits* and *plants* having their distinct seasons) being no waies troublesome to its *Inhabitants*, but very agreeable to the *English*; and being found thus healthful hath occasioned several persons to remove from the *Bermudes* to settle here, who dwelling in so pure an Air durst not venture in any other *Country*. Nor do those from the *Bermudes* only remove hither, but from most of the *American Plantations*, as well as from *England*, it being esteemed by all one of the best Colonies that ever the *English* were Masters of, for here is altogether Health, Pleasure, and Profit, centered together, which cannot be met with in so large a measure in any other part of the *Indies*. This *Country* has first *Inhabited* by the *English* about the year 1660, and became a *Proprietorship*, which his present *Majesty King Charles* the Second, granted by Patent, to the Right Noble *George Duke of Albemarle*, the Right Honourable *Edward Earl of Clarendon*, *William Earl of Craven*, *Anthony Earl of Shaftsbury*, *John Lord Berkley*, *Sir George Cartwright*, *Sir Jo. Colleton*, and *Sir William Berkley*, and to their Heirs and Successors; and the said *Lords Proprietors* having by their Patent power to Establish a *Government*, and make *Laws* for the better regulation thereof, and the inviting of *Inhabitants*, have formed a *Model* so well framed for the good and welfare of the *Inhabitants*, that

it

The Native
Inhabitants.

Its Fruits.

Commodities.

Its Trees.

Fowls.

The People of
Canada.Customs observed
among
them.

it is esteemed by all judicious persons without compare. The *Natives* of *Carolina* according to the observation of one *Ledener*, (who made three several journeys from *Virginia* to *Carolina* about the Year 1670, for a discovery of those parts, and the nature and disposition of the *Inhabitants*) are said to be of a ready wit and good understanding, they instruct their Children in such things as relate to their *Families*, and *Country*, which is so preserved from Generation to Generation. They worship one *God*, as Creator of all things, to whom their *High Priest* offers Sacrifice, but believes he hath something else to do than to regard *Humane affairs*, committing them to lesser *Deities*, viz. to good and evil *Spirits*, to whom their inferior *Priests* make their devotion and Sacrifice. They believe the transmigration of the soul, and when any one dieth they interr with them provisions and Household stuff for the next World, which they fancy to be beyond the *Mountains*, and *Indian Ocean*. In their *Marriages* they are very Superstitious; for the generality they are of a good and honest meaning, much addicted to mirth and dancing, and above all are much prone to Honour and Valour which they place above all other virtues. They are great favourers of the *English*, living together in love and friendship, and upon all occasions ready to contribute their assistance unto them. The *Country* is by them divided into several Kingdoms, and the people in the one keep no correspondence with those that border upon them, often waging War against one another. The Soil is rich and fertile, and produceth excellent *Fruits*, as *Apricocks*, *Peaches*, *Grapes*, of which the *English* have made good *Wine*; *Olives*, of which good *Oyl* is made; *Walnuts*, *Apples*, *Pears*, *Plumbs*, *Cherries*, *Piggs*, *Mulberries*, *Strawberries*, *Water-Mellons*, *Marachocks*, *Quinces*, and other *Fruits* known to us in *Europe*, which for goodness are no waies inferior to them; and in the Southern part *Oranges*, *Limes*, *Pomegranates*, and *Pomecitrons*, and the earth is generally very apt to produce and bring to maturity *Corn*, all sorts of *Garden Herbs*, *Roots*, &c. The *Commodities* which this *Country* doth and may produce are *Wines*, *Oyls*, *Silk*, *Mulberry-trees* growing wildy, *Cotton*, *Indico*, *Ginger*, *Tobacco*, *Masts* for *Shipping* which for length, straightness and bigness are the best in the World, &c. And it is believed that here may be made more *Wines*, *Oyls* and *Silk* than *England* will vent. Besides the *Mulberry-trees*, here are *Cedar*, *Oak*, both white and red, *Poplar*, *Bay*, *Ash*, *Pine* with divers others whose names are not yet known. The Woods are well stored with *Pheasants*, large *Turkeys*, *Partridges*, *Turtle-Doves*, *Pigeons*, great variety and plenty of small Birds, also *Deer*, *Hares*, *Cornies* &c. The *Country* is well watered with *Rivers*, which with the Sea sufficiently furnish the *Inhabitants* with excellent Fish and such common in *Virginia*; here are great plenty of wild Fowl, as *Geese*, *Cranes*, *Heron*, *Swans*, *Curlews*, *Heath Cocks*, *Oxeys*, *Brants*, *Dottierels*, *Widgeons*, *Teal*, *Duck* and *Mallard* in an undestroyable quantity. Here are at present two considerable Settlements, viz. at *Albemarle River* in the North, and at *Ashley River* in the middle of the *Country* which is likely to be the scale of Trade for the whole *Country* as being very commodiously seated for *Shipping*, and in a healthful place.

In all these parts, which we have passed under the name of *CANADA*, the people are very barbarous, having neither *Religion*, nor *Learning*. Divers people have diversity of Languages: they count their years by the course of the *Sun*, their months by that of the *Moon*, their four Seasons by any remarkable thing hapning in them. They are of a middle stature, well proportioned, disposed to running and swimming, of an olive or tawny colour, because they go for the most part naked, often anointing themselves with a certain *Oyl* to hinder the Flies from tickling them; they wear few Ornaments on their bodies, though their Women do; making themselves Necklaces, Bracelets and Scarfs, formerly of *Fishes*, *Shells*, *Porcelain*, &c. now of *Glass*, *Chrystal*, and Toys, carried hence.

They make Feasts at their Marriages, at their Victories, at the reception of their friends; and take much *Tobacco*. They eat sometimes the flesh of their enemies which they have taken in the War, and fed well before, whom they kill

kill with excessive cruelties. They use Bows and Arrows, in which they are very expert.

F L O R I D A.

F L O R I D A may be esteemed a part of *New France*, since the *French* were the first that established there any Colony, by the consent of the people of the Country. It may likewise be esteemed part of *New Spain*, since at present the *Castilians* have two Colonies under the Jurisdiction of the Audience of *S. Domingo*, one of the four Audiences of *New Spain*, but these two Colonies are so weak, and so near the one to the other, and the Country is so that that is not considerable. We may say, that *Florida* is between *New France*, and *New Spain*, and that it extends itself from the River of *Palmas*, which bounds it from the Province of *Panuco* in *New Spain*, unto the River *Jordan*, which divides it from *Virginia*, which I have esteemed in *Canada* or *New France*. The greatest part of its Coast is on the Gulph of *Mexico*, which flows on its South: Another part on *Mer del Nort*, which washes it on the East: Between this Gulph and the Sea, *Florida* stretches out a *Peninsula* towards the South; where the *Cape of Florida* is not distant from the Port of *Matanzas* in the Isle of *Cuba*, above 35 or 40 Leagues. The more Western Coast of *Florida*, reaches 450 Leagues, the Eastern 150; the *Peninsula* between both, advancing 150 Leagues from the Coast, and not being above 60 or 75 Leagues broad, makes yet another Coast of 350 Leagues; so that all *Florida* hath not much less than 1000 Leagues of Coast on the Sea.

The *Castilians* have no Colony on the Gulph of *Mexico*, nor on the Coast, where the *French* have formerly been. Those two Colonies they have here, are *St. Augustine*, and *St. Mathew*, 15 or 16 Leagues one from the other, on the Eastern Coast of the *Peninsula*, and there where it approaches the Coast, where the *French* had settled: the North and West of *Florida* is enclosed with Mountains, which divides it from *New France*, and *New Mexico*. *St. Augustine*, which is the best, and strongest of the two Colonies, was taken and pillaged by Sir *Francis Drake* in Anno 1585.

F L O R I D A was first discovered in 1496 by the *English*, under the Conduct of *Sebastian Gabott*, whom *Henry* the Seventh, King of *England*, sent to seek by the West a passage to fall into the East: he contented himself to have seen the Country yet unknown, and to make report thereof to his Master; afterwards better searched into by *John de Ponce* of *Leon*, who in 1512 would have established a Colony for his Master the King of *Castile*, were it not for the resistance of the Country made against him, who oftentimes made him retreat, and at last forced him to return to *Puerto Ricco* of which place he was Governour; where, on a desperate wound in his last encounter, which he there received, he ended his life. In 1524 *Lucas Vasques* of *Aillon*, and some other *Spaniards*, landed divers times at *Florida*, with no other design than to take away its Inhabitants, whom they transported to *Hispaniola*, and *Cuba* to work in their Mines, wherein they had already consumed the greatest part of its Inhabitants. *Pamphilus Narvaes* was likewise there in 1528, who traversed it as far as the Mountains of *Apalachi*, where he hoped to find Gold. The most famous landing that the *Spaniards* have ever made in *Florida*, was in 1534, under the conduct of *Ferdinando Soto*; who being rich with the spoils he had gained, in his Conquest of *Pernu*, led hither 350 Horse, and 900 Foot, with which force he traversed *Florida* almost on all sides, without endeavouring to bind a Colony; much molesting those of the Country, by whom he was in like manner turmoiled, during the many years he coasted it; till in the end, not finding those riches he expected, he died with grief, and was buried at the bottom of a River, for fear lest his body should fall into the hands of his Enemies. His people returned in 1543, there remaining about 30 Horse, and 300 Foot. All the advantage *Soto* received by his travel, was, the giving the

Its Coast.

Florida first discovered by the English.

Also by John de Ponce and others.

Ferdinand Soto his landing here.

the name of *Florida* to the Country, either because he arrived there the day of *Pasque Floride*; or because that, landing, he found the herbs and flowers in their prime and verdure. In 1549 the Emperor *Charles* the Fifth, and the Council of the *Indies* thought it not good to send any more *Armada-men*, but rather some Religious persons, to sweeten the fierce humours of these barbarous people: *Lewis of Barbafre*, of the Order of *St. Benedikt* went with some other *Fathers*; but presently those of the Country seized and massacred him, with his two Companions, flaying them, and hanging their skins at the doors of the *Cabanes*; the rest saved themselves, by retiring into those Ships that brought them.

The *French* were not in *Florida*, save under the Reign of *Charles* the Ninth. *Francis Ribaut* was sent in 1562. He made alliance with those of the Country, and built the Fort *Caroline* on the River *May*. *Ribaut* being returned to *France*, with promise to bring thither more people: but too long delaying his return, his men grew diffident and mutinous, and built a strange kind of Vessel, and with the small stock of provisions they could stow in her, put to Sea, where they endured so great want, that they were forced to cast lots to eat one another; which fell first to him who had been the cause of their discord.

Rene Laudoniere returned in 1564, restored the Fort *Caroline*; but the *Castilians*, jealous to see this establishment near their *New Spain*, resolved to drive them thence: they landed with show of no design against the *French*, but their intentions were otherwise, for in the end they surprized the Fort, out of which *Laudoniere* could scarce save himself, took *Ribaut* on the Sea who had before been Shipwrecked; hanged the Souldiers, and fled *Ribaut*, as *Lescarbott* saith.

In 1567 *Dominic de Gourgues*, a *Gascon*, and of *Mont de Marfan*, made an attempt of his own head to revenge this Affront: he put to Sea at his own expence, with a hundred and fifty Souldiers, and eighty Mariners; landed in *Florida*, and with the aid of those of the Country, who affected the *French*, retook *Caroline* from the *Spaniards*, with two other Forts which they had new built; caused them to be hanged on the same trees whereon they had hanged the *French*; razed the Fort, and returned into *France* in 1568, where he had no small trouble to clear himself for his exploit.

Florida being between the twenty fifth or thirtieth and fortieth Degrees of *Septentrional Latitude*, the Country cannot chuse but be good; their Woods and Forests are well clothed with trees, as lofty *Cedars*, large *Oaks*, *Cypress* and *Bays*, trees of a large proportion, also great store of that wood called by the *French* *Sassafras*; as also another tree called *Esquine*, the Bark of which trees are an excellent remedy for many distempers, especially the *French* Distease. And in these Forrests and Woods are found all sorts of Beasts and Fowl; the Country is well stored with several sorts of Fruits, as *Grapes*, *Cherries*, *Plumbs*, *Mulberries*, *Chestnuts*, &c. It is enriched with Mines of *Gold* and *Silver*, but in no great plenty, nor much regarded by the Natives. It is well watered with fresh Streams, which are stored with variety of *Fish*, and *Crocodiles*, which they eat; they have all sorts of *Fowl* and *Venison* as we have. The people are of an *Olive-colour*, great stature, but well proportioned; their hair is black which they wear very long; their women do far exceed other adjacent Nations in handsomness, which makes them much desired by Strangers, and their shape and beauty is more discernable in that they go naked till their *Purgations*, and afterwards only they make use of skins of Beasts, taken in hunting, which they embellish with *Feathers*, of divers colours, which they tie about their waists, and hangs down to their knees, only to hide their *Privities*; and their *Arms*, *Back*, *Breast*, *Knees*, and other parts which are exposed to sight, are stained with several sorts of Paintings, not to be washed off, which is esteemed a great ornament among them. They bear some reverence to the *Sun* and *Moon*; they are accounted very crafty, cunning, deceitful, revengeful, and much addicted to War; their Arms are *Bow* and *Arrows*, as are almost all the *Americans*; they know the nature of their Herbs,

Lewis of Barbafre a Benedikt massacred here.

An Exploit of the Spaniards.

Another by the French.

The fertility of Florida.

Its Inhabitants, as to their Stature, Habit, Customs, &c.

and

and have Flowers of fine colours; they pass a part of the year in the Woods; where they live on *Hunting*; and part near the *Lakes, Rivers and Sea* where they *Fish*. They have a Custom among them, that is, the Women when their Husbands die, do out of their hair, and strew it on his Sepulcher, and are restrained from marrying again till their hair is long enough to cover their Shoulders. The Country yields great plenty of *Mayze*, which is their natural bread, which they sow and reap twice in one year; this *Grain* they gather, and put into publick places, and distribute it to every Family as occasion requires.

The manner of
their *Whale*
Fishing.

Their *Whale Fishing* is made with a cunning and boldness, which those of *Europe* dare not attempt. The *Fisherman* having discovered one, enters into his *Cano*, then leaps upon his back, and there riding takes his time to plunge a stick into one of his nostrils; and what ever he endeavour he uses, though he plunge under water, he holds fast; and expecting his rising, fastens another stick on the other side, and then resires with a cord fastned to these sticks; the *Whale* not able to breath, grows weak; and then by little and little, he draws it to the shore; where assisted by his Companions, he cuts it in pieces, drying it to make *Flour*, and of that *Flour Bread*, which lasts a long time.

The people of *Florida* are governed by their *Paravussis*, who lead them to War where they kill the men, but preserve the women and children; they have their *Jovons*, or *Sacrificers*, who serve as *Physicians*, and to whom they bear honour. Their *Paravussis* being dead, are interred with many Ceremonies; living, are much feared and obeyed. They have many wives, among which one is esteemed the chief, whose children may hope for the charge and dignity of their Father.

The House of *Paravussi Ovade* (when Captain *Albert* was there to beg of him some provisions; besides divers moveables and ornaments) was hung as high as a Pikes length with *Tapestry*, made of rare *Feathers*, and of most beautiful colours, composed of such Artifice, that they were worth the most part of ours. The Coverlid of his Bed was white, tisled in divers copartiments, and with a fringe of Scarlet about it.

Rivers in *Florida*.

Chief Towns.

Rivers of most note in *Florida* are: 1. *Rio de Flores*, 2. *Rio de Spirito Santo*, 3. *Rio de Neves*, 4. *Rio Grande*, 5. *Rio Secco*, 6. *Rio Garunna*, 7. *Rio Charente*, 8. *Rio Axona*, and some others.

Chief Towns (or rather Cottages) in *Florida*, are: 1. *St. Hellens*, on a promontary so named. 2. *Port Royal*, a good and well frequented Haven, seated on the mouth of a River so named. 3. *St. Matthews*, 4. *St. Augustine*, 5. *St. Philip*, 6. *St. Jago*, once (if not at present) possessed and fortified by the *Spaniards*, with some others of less note.

The

The ISLES of BERMUDES.

East of *Virginia* and *Florida* we have the Isles of *BERMUDES*, so called from *John Bermudes*, a *Spaniard*, by whom it was first discovered; also called the *Summer-Islands*, from the Shipwreck which one Sir *George Summers*, an *English-man*, there suffered: It is about 15 or 1600 Leagues from *England*, 400 from *Hispaniola*, and only 300 from the nearest Coast of *Virginia* and *Florida*. Of these Isles the greatest, called *St. Georges*, is five or six Leagues long, and almost throughout not above a quarter, third, or half a League broad; the others are much less. All together make a body which form a *Cressant*, and inclose very good Ports; as those of *Southampton*, *Harvington*, *Pagets*, the *Great Sound*, *Dover*, and *Warwick*.

The Air is almost always serene, sometimes moist and hot, but very healthful, agreeing well with the *English* Bodies, who have here at divers times settled and established a fair and powerful Colony, and have strongly fortified the Approaches, which at present are very difficult; and the Earth is exceeding fertile, yielding two Crops a year; their *Mayze* they gather in *July* and *December*: They have excellent Fruits, as *Oranges*, *Dates*, *Mulberries*, &c. They have plenty of *Tortoises*; which is their ordinary food, and the *Hogs* which the *Spaniards* formerly carried thither are excellent, and much increased; they have many *Sea-birds*, and other Fowl; they have no fresh Water but that of Wells and Pits, there being neither Fountain nor Stream in these Islands. They have no venomous Beasts, their *Spiders* not being poisonous, but of sundry and various colours; and in the Hot weather they make their Webs so strong, that oftentimes Birds are entangled and caught in them. *Cocheneil* and *Tobacco*, with some *Pearls* and *Amber*, are their principal Riches, for which they have a good trade. Their Governour is sent them by the King of *England*, who governs them by our *English Laws*, whom they also own as their Supream; and it is observed, that scarce any are found to die but with Old age.

Its Parts.

Its Air.

The Earth
fertile.

No venomous
Beast here.

Its chief Com-
modities.

Kkk

MEXI.

MEXICO, whose Provinces, with their chief Places, are those of

GUADALAJARA, whose Provinces, with their chief Places, are those of

MEXICANA, with its several Audiences of

GUATEMALA, whose Provinces, with their chief Places, are those of

St. DOMINGO; In which are the Isles of ANTILLES, or CAMERICANES, otherwise called the Isles of LUCAYES, and the CARIBE Isles; the chief among which are those of

FLORIDA,	St. Hellens, Port Royal, St. Matthews, St. Augustine, St. Jago, Nagueater, Mexico, Chulula, Tezcuco, Quilavaca, Queretaro, Metitlah, Cuyocan, Acapulco, St. Jago de los Valles, Ahuac, St. Lewis de Tempas, Mechoacan, Colima, St. Philip, Tlascala, los Angeles, Antequera, Spiritu Santo, Not. Sen. de la Victoria, Merida, Campeche, Guadalupe, St. Maria de las Lagos, Donipollita, la Purification, Xalisco, Chiametlan, St. Sebastian, St. Michael, Nalca, St. John, Zacatecas, Nombre de Dios, St. John, St. Barbara, St. Eze, Cibola, Port de Monterey, Port de Roque, St. Jago de Guatemala, St. Salvador, la Trinidad, St. Michael, Xeres, Vera Pax, Ogleverlan, Ciudad Real, Valladolid, Gracias di Dios, Truxillo, St. George de Olancho, Leon, Granada, Jaena, Cartago, Nicoya, Castro de Austria, la Concepcion, Trinidad, Santa Eze, Paria, St. Jago, St. Spiritus, Porto del Principe, St. Christophoro, St. Jago, Port Royal, Passage, Melilla, St. Domingo, Porto del la Platte, St. Jago, Monto Christo, St. Juan del puerto Rico, St. Germain, St. Juan del Puerto Rico, Sandy point, Basse terre, St. Michaels, Little Brifol, St. James, Charles Town.
MEXICO, particularly, so called,	
PANUCO,	
MECHOACAN,	
THASCALA,	
GUAXACA,	
TABASCO,	
JUCATAN,	
GUADALAJARA,	
XALISCO,	
CHIAMETLAN,	
CULLACAN,	
CINALOA,	
LOS ZACATECAS,	
NEW BISCAY,	
QUIVIRA,	
ANIAN,	
CIBOLA,	
CALIFORNIA,	
GUATEMALA,	
VERA PAX,	
SOCONUSCO,	
CHIAPA,	
HONDURAS,	
NICARAGUA,	
COSTARICA,	
VERAGUA,	
CUBA,	
JAMAICA,	
HISPANIOLA,	
SAONA,	
BOREQUEM,	
St. CRUX,	
St. CHRISTOPHERS,	
NIEVES,	
ANTEGO,	
MONT SERRAT,	
GUADELOUPE,	
MARIGALANTE,	
MARTINIQUE,	
St. LOUZIA,	
BARBADOS,	
St. VINCENT,	
GRENADO,	
BARBADA,	
ANGUILLA,	
DOMINICA,	

MEX-

MEXICO,

OR

New Spain.

MEXICO, or *NEW SPAIN*, is the fairest and most famous part of *America Septentrionalis*, and sometimes the *Spaniards*, comprehended under this name all that *America*: We may esteem that which belongs to the Catholick King for the greatest part; in which we shall have several Provinces, and all comprised under four Audiences or Courts of Parliament; viz. that of *St. Domingo*; of *Mexico*, which bears the particular name of *New Spain*; of *Guadalajara*, or *Nova Galicia*; and of *Guatemala*.

The Audience of *St. DOMINGO* hath under it all those Islands which are before the Gulph of *Mexico*; then *Florida* which is North-West of them, and in *America Septentrionalis*; and *Venezuela*, *New Andalusia*, and *Rio del Hacha*, which are towards the South of them, and in *America Meridionalis*.

The Audience of *MEXICO* hath the Provinces of *Mexico*, *Panuco*, *Mechoacan*, *Tlascala*, *Guaxaca*, *Tavasco*, and *Jucatan*. That of *Panuco* is North of *Mexico*; *Mechoacan*, West; *Tlascala*, East; *Guaxaca*, *Tavasco*, and *Jucatan*, continuing likewise towards the East. The two last lie wholly upon *Mer del Nort*; *Guaxaca*, and *Tlascala*, on the two Seas of North and South; *Mexico* and *Mechoacan* only on that of the South, and *Panuco* on that of the North.

The Audience of *GUADALAJARA* contains the Provinces of *Guadalajara*, *Xalisco*, *Los Zacatecas*, *Chiametlan*, *Cinaloa*: some add *New Biscany*, and others likewise *Cibola*, *Quivira*, *Anian*, *California*, &c. *New Biscany*, and *Los Zacatecas*, touch not the Sea; *Guadalajara*, little; to wit, between *Xalisco* and *Chiametlan*: and these begin on *Mer del Sud*. Others advance themselves far into that which they call *Mer Vermejo* or the *Red Sea*, the Isle of *California* being on the other side.

The Audience of *GUATEMALA*, South-East of that of *Mexico*, continues between the Seas *del Nort* and *del Sud*, advancing towards *America Meridionalis*.

There are under it the Provinces of *Guatemala*, *Soconusco*, *Chiapia*, *Vera Pax*, *Honduras*, *Nicaragua*, and *Castoria*: and these two last lie on both Seas; *Honduras* and *Vera Pax* on the Gulph of *Honduras*, towards the *Mer del Nort*; *Chiapia*, within Land; *Guatemala*, and *Soconusco*, on the *Mer del Sud*.

The Audience of *MEXICO*, so called from its principal City; now known by the name of *Nova Hispania*; and by this City of *Mexico* the *Spaniards* began to make themselves absolute Lords of all these Quarters. Which before their arrival was very populous; but in the space of 16 or 17 years, destroyed above six Millions of its Inhabitants by cruel and unchristian-like deaths, as

K k 2

roasting

The City of Mexico described.

roasting some, cutting off the Members of others, putting out the Eyes of others, casting others alive to be torn in pieces and devoured by *wild Beasts*, and the like horrid deaths; and only to act their Tyranny over them, rather than to reduce them to obedience, which might have been otherwise obtained without shedding so much Blood. This City was called by its ancient Inhabitants *Tonostitlan*, and was the residence of their Kings, and is at present the fairest of all *America*, seated in the midst of a Lake, in some places 10 Leagues long, and 7 or 8 broad, having 25 or 30 Leagues circuit: It is not joyned to the Main Land, but by 3 Causeways, of which, that towards the West is but 3 quarters of a League long; that towards the North a League and an half, and the last, 3 Leagues. It was by this last that *Cortez* and the *Spaniards* made their approaches, and took the City. All this Lake is salt; but there falls into it another almost of the same bigness, which is fresh, and good to drink; both together are 45 or 50 Leagues circuit, in which are said to be about 50000 *Wherries* continually seen to row and carry Passengers; they have about 50 *Burges* or *Towns* on their Banks, whereof some have once been esteemed great Cities: The salt Lake yields quantity of *Salt*, the other so much *Fish*, that its Fishing hath been farmed for 100000 Crowns yearly. In this City may be found 4000 Natural *Spaniards*, 30000 *Indians* or *Americans*, (there having been formerly 200000) 20000 *Negroes*; and its Jurisdiction contains 250 *Towns*, of which some have their *Schools*; more than 3000 (some say 6000) *Eftancia's*, that is, *Farms*; and in all 500000 *Americans* Tributaries. It is the residence of the *Vice-Roy of America Septentrionalis*, as also of an *Archbishop*, and many other Officers of Justice of the *Mint*, and of the *Inquisition*. It hath a famous *Academy*, 150 *Monasteries* for the one and the other Sex. It is distinguished (as under its Ancient Kings) into these Quarters, which at present are called that of *St. John*, of *St. Maria the Round*, of *St. Paul*, and of *St. Sebastian*, and of *St. James*, formerly *Tlatelulco*. In this last, which is very great and the fairest, is the Palace of the *Vice-Roy*, the House of the *Archbishop*, the Court of *Audience*, the *Mint*, and other Offices. In this City of Mexico is a Cathedral Church, which was begun by *Cortez* with so much haste, that to raise two Columns, for want of Materials they made use of the Stones which had made part of the Statues of the Idols. Here is also a *Printing-house*, several Houses of *Jesuits*, *Dominicans*, *Franciscans*, *Augustinians*, and other Religious Orders; some *Colledges*, abundance of *Hospitals*, and other publick Buildings; all of great state and beauty. They have here four things which are remarkable for Beauty, *viz.* their *Women*, their *Apparel*, their *Horses*, and their *Streets*.

The residence of a Vice-Roy, &c.

Chulula described.

Among those places which are, or have been on the two Lakes of Mexico, *Chulula* is reckoned one of the fairest; scarce excepting that of Mexico, which it in times past contended as well for state as bigness, once containing near 20000 Houses, and beautified with so many Temples as there are days in the year. The People were said to be so addicted to Idolatry, and so barbarous in their bloody Sacrifices, that it sacrificed yearly no less than 5000 Infants of both Sexes on its Altars before its Idols. *Tezcuc*, once twice as great as *Sevil* in Spain; its Streets are fair and large; its Houses stately and Beautiful, and adorned with many *Conduits* and *Aqueducts*, which furnished them with fresh Water; though seated on the brink of the Salt-Lake of Mexico. *Quitlavaca*, built on divers little Islands like to *Venice*, was joyned to the Continent by a Causeway made of *Flint-stones* of about a League long, but narrow; called by the *Spaniards*, *Venezuela*, containing about 2000 Houses. *Tetlapalapa*, seated part on the Lake and part on the Banks, with a Paved way to Mexico, from which it is distant two Leagues: once a large City, having no less than 10000 well built Houses, which were plentifully supplied with fresh Waters from its many Ponds, as well as its beautiful Fountains. *Queretaro* hath two Fountains, of which one is so hot, that its Waters at first burn, being cold, fatten Cattle; the other runs four whole years continually, and ceases other four whole years; having likewise this property, that it increases in dry, and diminishes in moist and rainy weather. *Mestitan*, once of good repute, containing

Its Inhabitants

Tezcuc described.

Quitlavaca described.

Tetlapalapa described.

Queretaro described.

Mestitan described.

Cuyocan and Mexicaltzingo described.

taining about 30000 Inhabitants, seated on an high Hill, begirt about with pleasant Groves and fertile Plains, which affords excellent Fruits, and very good Grains. *Cuyocan*, of about 50000 Houses, and *Mexicaltzingo* of about 4000, both upon the Lake, were in times of *Paganism* adorned with many beautiful Temples, so rich, that at a distance they seemed to be made of *Silver*; but now their lustre is decayed, most of them being converted to Monasteries and Religious Houses. *Acapulco*, a City and Port on *Mer del Sud*, seated on a safe and capacious Bay, full of convenient places or Docks for Ships to ride in, so that it is said to be the safest Haven of all those Seas; it is distant from Mexico 100 Leagues. The *Mexicans* keep here some Vessels, and trade to the *Philippines*, and to *China*, from whence they are distant 3000 Leagues.

Acapulco described.

The Air of Mexico is sweet and temperate, though situated under the Torrid Zone, the Heats thereof much qualified by the cooling Blasts, which rise from the Sea on three sides of it, as also by the frequent refreshing Showers, which always falls in June, July, and August, which is their hottest Season of the year: The Soil is so fertile that they gather their Crop twice a year; yet want they good Wine and good Oil by reason of the Summer-Rains. It is believed, that no Country in the World feeds so much Cattle, some private persons having 40000 *Oxen* or *Cows*, others 15000 *Sheep*, &c. and an infinite number of tame Fowl, as *Hens*, *Turkies*, &c. whence it comes that *Oxen*, *Sheep*, *Goats*, *Hogs*, and tame Fowl are hardly worth the buying. Their Horses are excellent, the Race coming from the best of Spain.

The Air of Mexico.

Its fertility.

There are few Mines of Gold, though many of Silver, about Mexico; as those of *Comana*, *Fuchuco*, *Archichica*, *Temozcaltepeque*, *Zacuapala*, *Talco*, *Timquilpo*, *Cu Tepeque*, *Talpajava*, *Zumpango*, *Guanaxuato*, and others: And these Mines are not so rich as those of Peru; but easier wrought, and with less expence and loss of Men. The principal Riches of the Country, after their Silver, Gold, Iron and Copper, are their Grains, Fruits, Wool, Cotton, Sugar, Silk, *Cocheneel*, the grain of *Scarlet*, *Feathers*, *Honey*, *Balm*, *Amber*, *Salt*, *Tallow*, *Hides*, *Tobacco*, *Ginger*, and divers Medicinal Drugs. The Natives of this Country are more ingenious than the rest of the Savages, and are much civilized since the *Spaniards* had to do here; they are excellent in many Mechanical Arts, especially in making fine Pictures with the Feathers of their *Cincons*, which is a little Bird living only on Dew, and place their Colours so well, that the best Painters of Europe admire the delicacy, they far exceeding a piece of Painting. They have some memories of their Histories, make use of certain Characters instead of Letters of our Alphabet; their Tongue was extended so far as they could extend their Dominion, though in divers Provinces there were diversity of Languages: They are excellent in refining of Metals, expert Goldsmiths, and curious in Painting upon Cotton.

Mines in Mexico.

Its Inhabitation

Among their Rarities of this Country there is a most admirable Plant called *Maguey*, from which they extract several things; it hath on it about 40 kinds of Leaves, which are fit for several uses; for when they are tender they make of them Paper, Flax, Thread, Cordage, Girdles, Shoes, Mats, Mantles, Stuffs, &c. upon them grow Prickles so strong and sharp, that they make use of them instead of Saws, also they serve for Needles. The Bark, if it be roasted, maketh an excellent Plaster for Wounds; from the top Branches comes a kind of Gum, which is a sovereign Antidote against Poyson: from the top of the Tree cometh a Juice like Syrup, which, if seethed, will become Honey; if purified, Sugar: they make also Wine and Vinegar of it, and it affordeth good Wood to build with.

The Plant Maguey, a very great rarity.

In this Country are two Mountains, one which vomits flames of Fire like *Aetna*, and another in the Province of *Guanaxaca*, which sendeth forth two burning streams, the one of black Pitch, and the other of red. The Kings of Mexico were rich and powerful in regard of their Neighbours, having no less than 2 or 3000 Men for their ordinary Guard, and having been able to raise 2 or 300000 Foot; among the 25 or 30 Kings, which were his Tributaries, some could arm 100000 Men; their Revenues vast, which they raised out all Commodities, as well of Natural as Artificial, which the King received in kind, partici-

participating of the Fruits of all Mens labour, and sharing with them in their Riches. Their Palaces were magnificent, both that within the City, and those in divers parts of the Kingdom; they kept great Attendance, lived in great Pomp, were much revered of their Subjects; in their Vestments stately, being adorned with *Gold, Pearl, and Precious Stones*, wearing a rich Crown resembling that of a *Duke*; their *Coronations* held with great pomp, at which times they used bloody Sacrifices of Men and Children, which for the most part were their Enemies, but sometimes their own; their Temples were stately, with many Idols whom they worshipped; which were attended with abundance of *Sacrificers* or *Priests*; and to excite their Souldiers to valour, they used three degrees of Honour or Orders of *Knighthood*, which according to their merit were conferr'd upon them; the first was distinguished by a *red Ribband*, the second called the *Tyger* or *Lion-Knight*, and the third the *Gray-Knight*; which among other things were privileged to apparel themselves in *Cotton* in a different habit, and to adorn themselves with *Gold* and *Silver*, which things are prohibited to others.

Moreover, the present *Mexicans* descended not from the Ancient Inhabitants of the Country, but from divers People, which had their residence in the North, and not unlikely from that which we call *New Mexico*. The History they produce of the manner how they came from these quarters at divers times, of the time which the one and the other, and particularly of him whom they last employed in their Voyages, those Ceremonies they observed, and likewise the name of their chief *Mexi*, seems to accord somewhat with the Voyage of *Moses* and the *Hebrews*, when he led them to the Land of Promise. These People becoming Masters of *Mexico*, formed a considerable Government, and gave it divers Kings. *Montezuma*, under whom *Ferdinand Cortez* entred the Country, was but the ninth in number.

The *Inca-Mango-Capac*, and his Wife *Coya Mama-Oelbo*, were the first that led them to a human and civil life, they made themselves be believed to be Brother and Sister; Children of the *Sun* and *Moon*; and that they had been sent here below for the good of Men. And with this belief they withdrew them from the Mountains, Caves, and Forrests, and gave them the first knowledge of the Law of Nature. *Inca-Mango-Capac* taught Men how to till the Earth, to graft *Plants*, to feed *Flocks*, to gather the best *Fruits*, to build *Houses* and *Cities*, &c. *Coya Mama-Oelbo*, learnt Women how to *Spin*, *Weave*, *Sow*, make *Habits*, &c. and above all instructed, that their principal care ought to be to serve and obey their *Husbands*, and feed and instruct their *Children*.

And these People finding themselves in a better and more reasonable way of living than before, easily submitted themselves to the Government of these *Inca's*; addicted themselves to the Religion they taught them, which was to adore the *Sun*, as that *Star* which above all the rest did most visible good to *Men, Beasts, Grains, Fruits, Plants*, &c. and so soon as these *Inca's* knew the affection of the People, they raised Arms, assembled Troops, and reduced to the same Government and the same Religion many neighbouring People; but still more by sweetness than force: and in the end, composed an Estate or Empire, which for its greatness and riches, and likewise for its Laws, was one of the most considerable of the World. And if we should put in parallel the Politicks of the *Inca's* of *Peru*, or of those of *Mexico*, with them of the *Greeks* and *Romans*; *Acosta* maintains that these would have the advantage, and that the *Inca's* had so great a care of the good and repose of their Subjects, that there cannot be found in all History any *King* or *Emperour* that ever bore himself with so much sweetness, freedom, and liberality towards his People, as did the *Inca's*, Kings of *Peru* and *Mexico*. So soon as a Province entred under their Obedience, they made Channels every where to water the Lands; and that these Lands might be the more commodious for Tillage, they caused to be laid level what was unequal, evening by degrees what was too steep: The Lands proper for Tillage were divided into three parts, *viz.* for the *Sun*, for the *King*, and for the *Inhabitants* of the Country; and if these were in

The descent
of the *Maxi-
cans*.

The story of
the *Inca-
Mango-Capac*,
and his Wife
*Coya Mama-
Oelbo*.

in so great number, that the third part of the Land was not sufficient for their food, so much taken from the Third of the *Sun* and of the *King*, as was needful.

The Lands being equally parted according to the ability of every Family, the labour began with those of the *Orphans, Widows*, the old and impotent, and *Souldiers* when they were in War; after these, every one laboured and cultivated his own; then those of the *Curaca's* or *Governours*, which were to be after the Private persons; those of the *King* and of the *Sun* were the last. And this Order was so religiously observed, that a Governour having caused the Field of a Kinman of his to be tilled before that of a poor Widow, was hanged in the Field he caused to be tilled before its degrees; so careful were they of the Poor. Besides this labour for the Tillage of the Lands of the *Sun* and the *Inca's*, Private persons were obliged to make *Gloaths, Hofs, Shoes*, and *Arms* for the *Souldiers*, as also for those whom Age or Sickness made incapable of Travel or Labour. The *Wool* or *Cotton* was taken from the Flocks, and on the Lands belonging to the *Sun* and the *Inca's*: and each Province gave only what was easie and common, and each Private person only his labour: young Men under 25 years, Men above 50: Women and Lame people were exempt from these Tributes. They made no account of *Gold, Silver*, or *precious Stones*, but for their adornment, beauty, and splendor, nor needing wherewith to buy *Viaticals* or *Cloaths*; their Lands and ordinary Occupation yielding and furnishing them with what ever was necessary. Yet if at their hours of leisure they could discover any, they made a Present of it to their *Curaca's*: these to the *Inca*, when they went to salute him at *Cusco*, or when the *Inca* visited his Estates; and then it was employed either for the Ornaments of the *Royal-house*, or the Temples of the *Sun*. The Temple of the *Sun* at *Cusco* was so stately, and enriched with so much *Gold, Silver*, and *precious Stones*, that it is incredible. In this Temple, besides the principal Apartment which was for the *Sun*, there was others for the *Moon, Stars, Lightning, Thunder, Thunderbolt*, and *Rainbow*, which was the device of the *Inca's*. They esteemed the *Stars* as waiting-Maids, which followed the *Moon*; and all the rest Executioners of the Justice of the *Sun*; to whom alone they sacrificed *Sheep, Lambs, Rabbits, Fowls, Spices, Herbs, Habits*, &c. besides *Men* and *Children*, as was said before. The *Priests* of this Temple were all Descendants of the *Inca's*. In the Temples of other Provinces it sufficed, that they were descendants of the Privileged *Inca's, Curaca's* or *Governours* of those Provinces. They called Privileged those to whom the *Inca-Mango-Capac* had communicated this Title for them and their Children; but ordinarily the great Priest was *Uncle, Brother*, or one of the nearest kin to the *Inca*.

To make appear the Riches in some respect of this Temple, that which inclosed the divers apartments of the *Sun, Moon, Stars*, &c. were all wainscotted with Plates of *Gold*. The *Sun*, placed on his *Arter* towards the East, was of one Plate of *Gold* much thicker than the others, and the Figure in the same manner as our Painters here describe it; *viz.* a round Visage, environed with Rays and Flames. At the taking of *Cusco*, this piece, or the Image of the *Sun*, fell to *Maneca serra de Lequisano*, a *Castilian*; who being a great Gamester, lost it one Night at play; which made it to be said, That he had plaid away and lost the *Sun* in a dark Night, long before it was day. On the two sides of the *Sun* were the Bodies of the *Kings* or *Inca's*, deceased, ranged according to their times, and embalmed in such manner that they appeared living: They were seated in Thrones of *Gold*, raised upon Plates of the same, and accommodated in degrees or ascents: The Bodies of the *Queens* were according to the same order in the apartment, and on both sides the Figure of the *Moon*, where all the *Ornaments, Doors, Wainscots, Thrones*, &c. were of *Silver*. Near this Temple was a *Garden*, where the *Herbs, Plants, Flowers, Trees*, and where Beasts of all sorts, as also Birds, even to *Butterflies* and *Flies*, were of *Gold* and *Silver*; and so lively represented, that they seemed Natural. And there were likewise of these *Gardens* near the Palace of the *Inca's*, and near the

The Temple
of the *Sun* at
Cusco.

Their Sacri-
fices.
Their Priests.

The richness
of the Temple.

To show
the
richness
of the
Temple.

Houses

The Opinion
of the *Inca's*.

The Spaniards
great enemies
to the *Aztecans*.

Province of
Panuco, and its
fertility.

Its Colonies
and chief places
described.

Houses of the Virgins vowed to the *Sun*. In all the Provinces there were Temples of the *Sun*, built after the model of those of *Cusco*, but not so rich: Here the Virgins that vowed to the *Sun* were taken from the *Curaca's*, or the fairest in the Province: Of these the *Inca* or King might make use; but not of those of *Cusco*, being reserved only for the *Sun*; and which the *Inca* himself might not see. Though these *Inca's* and their People adored not, nor made any Sacrifice but to the *Sun*, yet the most knowing among them esteemed, much beyond the *Sun*, the *Pachachamac*, that is, the Author of the *Universe*; but, whom, not seeing, they contented themselves to adore in their inward parts. They had likewise some knowledge of the *Deluge*, believing that the Souls could not die, and that the Bodies should revive: Their *Aman-ta's* or *Philosophers* addicted their principal study to the *Morals*, cared little for the *Metaphysics*, *Medicine*, or *Astronomy*; yet observed the *Equinoxes*, the *Solstices*, and called the *Eclipses* the Anger of the *Sun*, and the Sickness or Sleepiness of the *Moon*, from which they awakened her by making great noises. Their *Poesies* were on divers honest Subjects; their *Comedies* and *Tragedies* on divers accidents of human life, or on the *Victories* and *Triumphs* of their *Inca's* or *Curaca's*. But we are entred too far into this matter: The *Inca G. de la Vega* saith, that there is Subject to many Volumes if we would recount all observable and good in the ancient Government of *Peru*, touching the Order established, to know the number of Persons that was in each City and each Province; what was its Revenue; what Forces might be raised; touching the *Judges*, the *Curaca's* or *Governours*, and other Officers of Policy or for the Militia; touching the publick Magazines for *Provisions*, *Cloaths*, and *Arms*; touching their Ceremonies in their *Sacrifices*, in their *Fasts*, in their *Funeral Pangs*; in their mourning a whole year after the death of their *Kings*; likewise in the establishment of their *Colonies*; of their *Schools*; of their *Post-houses* on great Rods, which they had built so stately that the *Romans* had not the like. But, as he saith, the best of these good Laws and Policy was abolished when the *Spaniards* became Masters of the Country; adding, that if there were Barbarism before the reign of the *Inca's*, after them the *Spaniards* brought in another worse than the first: The Inhabitants of the Country, for the most part, not having what was necessary for life, whatever labour or service they rendered their Masters, who ought to have contented themselves with the Riches they had reaped, and may yet reap, from the goodness of the Country. The ransom of *Atahualpa*, the pillage of *Cusco*, and the first incursion, which the *Spaniards* made into *Peru*, yielded them the value of 20 Millions of *Ducats*; but *Pizarro* and *Almagre*, the two first *Spanish Chiefs* which conquered *Peru*, and put to death *Atahualpa*; and in likelihood *Guascar*, likewise Brothers and *Inca's*, were so blinded with the *Gold* they found, and became so cruelly covetous, that each seeking to have all, they began between themselves an unhappy War, and in the end murdered, hanged, strangled, and beheaded one another till there was not left one of them, their Children or Brothers, &c. By which God seemed not only to have chastised their unbridled Ambition and insatiable Avarice; but to revenge the Blood of the *Inca's* they had unjustly slain, and their ill treating the *Indians*.

The Province of *PANUCO* is 100 Leagues long, and as many broad, divided by a River of the same name into two almost equal parts: That which is Southward, and towards *Mexico*, is the most fertile and best tilled; the other towards the North, and *Florida*, being worse. Likewise, that which approaches the Sea is worth much more than that within Land. The *Castilians* have established only three Colonies, of which *St. Steven del Puerto* is the Metropolis, seated on a River of the same name, and 12 Leagues from the Sea; the greatest Town of Traffick in this Province, built by *Ferdinando Cortez* out of the Ruins of *Panuco*, once the chief City of the Province till destroyed by him. Next, *St. Jago de los Valles*, likewise on the same River, situate on an open Country, and therefore fenced about with a Wall of *Earth*. And, Thirdly, *St. Lewis de Tempico*, seated on the North Banks of the River *Panuco*, and near the

the Coast of the Gulph of *Mexico*. These Colonies are so weakened by the incursions of the Inhabitants, who now knock one on the head, and then another, that the best had not above sixty Native *Spaniards*, *An. 1600*. They have Mines of *Gold* in the Country, which are not wrought; good *Salt-pit's*, out of which they draw the greatest profit, &c.

The Province and Bishoprick of *MECHOACAN*; between those of *Mexico* and *New Galicia*, stretches on the Coast of *Mer del Sud* near 100 Leagues, advances within Land from that Coast to the *Zacatecas* near 150 Leagues. Places of most note are, 1. *Colima*, seated ten Leagues from the Sea, built by *Gonsalvo de Sandoval* in the year 1522. 2. *Zacatula*, on the *Mer del Sud*, and at the Mouth of a River of the same name. 3. *Mechoacan*, the Metropolis, which takes its name from the Province so called, now the Seat of the *Archbishop*. 4. *Zinzouza*, once the Seat of the Kings of *Mechoacan*. 5. *Pazcuaro*, once the Seat of the Bishop. 6. *Valladolid*, seated near a Lake as large as that of *Mexico*, once the Seat of the *Archbishop*, till removed to *Mechoacan*. 7. *La Concepcion de Salaga*. 8. *St. Michael*, built by *Lewis de Velasco*, then Vice-Roy of *Mexico*. 9. *St. Philip*, built by the said *Velasco* at the same time, to assure the way going from *Mechoacan* or *Mexico*, to the Silver Mines of *Zacatecas*: this way being often pestered and frequented by the *Chichimeques*, *Otomites*, *Tarasques*, and other barbarous and as yet unconquered People, who greatly perplex and annoy the People that border upon them. Some place likewise in this Province the Cities of *Leon*, of *Zamora*, of *Villa de Lagos*, and about 100 Towns, of which many have their Schools.

The Soil of this Province is very different, but every where fertile, and in most places yields such great increase of all sorts of *Grains*, *Fruits*, &c. that it hardly hath its fellow in the whole World. It produceth likewise *Cotton*, *Ambergreece*, *Gold*, *Silver*, *Coppers* soft and hard; of the soft they make Vessels, of the hard Instruments instead of *Iron*. They have *black Stones* so shining, that they serve them instead of *Looking-Glasses*. They have store of *Plants*, *Medicinal Herbs*, *Mulberry-trees*, *Silk*, *Hony*, *Wax*, &c. The Country is said to be so healthful, and of so sweet an Air, that Sick people come hither to recover their health. It is well stored with *Rivers* and *Springs* of fresh Water, which makes their Pastures exceeding rich and fat. *Cattle* and *Fowl* are here found in great plenty, and their *Rivers* and *Lakes* afford store of *Fish*.

Between *COLIMA* and *ACATLAN* is found the Plant *Gozometcath* or *Olcacazan*, which takes Blood-shot from the Eyes, preserves the strength of the Body, or restores it to the Weak, cures the Tooth and Head-ach, resists all Poysons; and in fine, is most excellent against all Diseases. Those of the Country will judge of the event of any Sickness whatsoever it be, when they apply the Leaf on the party: If they fasten easily, they soon hope a cure; but if they resist or fall off, they expect nothing but a great and long sickness or death.

THASALA, or *LOS ANGELOS*, is between *Mexico* and the Gulph of *Mexico*, from whence it advances unto the *Mer del Sud*, stretching it self on the Coast of this Sea 25 Leagues; on the other 75, or 80. Places of most note are, 1. *Thasala*, which gives name to this Province; once the Seat of a Bishop, and once governed in form of a Common-wealth, and exceeding populous. It had four principal Streets or Quarters, which in time of War were each of them governed by a Captain; and in the midst of these Streets it had a most spacious Market-place, which was always thronged with People for the negotiating of their Affairs: It is situate on an easie ascent betwixt two Rivers, encompassed with a large, pleasant, and fruitful Plain, about 20 Leagues in compass. 2. *Los Angeles*, (or the City of *Angels*,) a fair City, built by *Sebastian Ramirez*, *Anno 1531*, now the Bishop's Seat. 3. *Vera Cruz*, built by the said *Cortez*, being a place of great concourse by reason of its near situation unto the Gulph, from whence it is a thorough-fare to the City of *Mexico*, which is distant from it 60 Leagues. Its Port of *St. Joan de*

L I I

The Province
of *Mechoacan*,
and chief places
described.

The Soil of
this Province,
and its Com-
modities.

Its Air.

The virtue of
the Plant *Gozometcath*.

The Province
of *Thasala*
with its Cities
described.

The fertility
of the Pro-
vince.

The Province
of *Guaxaca*,
with its chief
places de-
scribed.

The fertility
and commo-
dities of this
Province.

The Province
of *Tavasco* de-
scribed.

Its fertility
and commo-
dities.
Its chief Co-
lony.

The Province
of *Yucatan*,
with its chief
places de-
scribed.

The Isle of
Cozumel.

Oliva, though but bad, is in some esteem, being the best on the *Mer del Nort*, and held more commodious than that of *Mexico*. 4. *Zempoallan*, seated on a River of the same name, the Inhabitants whereof did *Ferdinando Cortez* good service in his conquest of *Mexico*. Beside those Towns or Cities, they count in this Bishoprick or Province 200 Towns, 1000 Villages, and 250000 Indians under its Jurisdiction, which are exempted from all extraordinary charge and imposition, because of their assisting the said *Cortez* in his conquest of *Mexico*. The Country is more hot than cold, fruitful in *Corn*, *Mayz*, *Sugar*, *Wine*, *Fruits*; feeds much *Cattle*, full of rich *Pastures*, well watered with fresh Streams. In the Valley of *St. Paul* was a Country man posselt of 40000 *Sheep*, which were the product of only two, which were brought him from *Spain*. The Inhabitants are much of the same nature and condition with those of *Mexico* aforesaid.

GUAXACA is between the *Mer del Nort* and *Sud*. The Plain of the Province makes a Lozenge, whose 4 sides are each 75 Leagues, or little more. Its Cities are, 1. *Antequera*, a Bishoprick, and which sometime communicated its name to the Province. It is seated in the Valley of *Guaxaca*, and adorned with stately Buildings, and beautified with a magnificent *Cathedral Church*, whose Columns are of *Marble*, and of a prodigious height and thickness. 2. *St. Jago*, seated in the Valley of *Nexapa*, but upon a lofty Hill. 3. *St. Ildefonso*, on a Mountain in the Province of *Zapoteca*. 4. *Spiritu Santo*, in the Quarter and on the River of *Guaxicoalco*, near the *Mer del Nort*. 5. *Cuertlavaca*, of note for a *Labyrinth*, not far distant, hewed out of a Rock. 6. *Aguatlico*, a noted Port on the *Mer del Sud*, well frequented by those who transport the Merchandizes of *Europe* and *Mexico* to *Peru*; a place of great Riches till plundered by those two eminent Travellers *Drake* and *Cavendish*, both *Englishmen*; besides those places, there is said to be 300 Towns, and as many *Eslancia's* or *Hamlets*, which are inhabited by the Natives of the Country, which pay Tribute to the *Spaniards*. The divers Quarters of this Province are all fertile, not only in *Grains*, but also in *Fruits*, *Cochineil*, *Silk*, *Cassia*; and the Earth well stored with Mines of *Gold*, *Silver*, and other Metals, and almost all the Rivers stream down *Gold*. Here is also a kind of *Almond*, which they call *Cacao*, which they make use of instead of *Mony*.

TAVASCO is only a Coast of an 100 Leagues long, between *Guaxaco* and *Yucatan*, scarce 25 Leagues broad between the Province of *Chiapa*, and the Sea; the Country is full of *Pools* and *Marshes* towards the Coast, *Wood* and *Forests* towards the Mountains; and the *Rains* being continual for 8 or 9 Months in the year, the Air is very humid; and its situation being much under the *Torrid Zone*, it engenders an infinite number of *Vermin*, *Gnats*, and *Insects*; yet the Soil is excellent, abundant in *Mayz* and *Cacao*, which is their principal Riches. There is observable here but one Colony of the *Spaniards*, which they call *Villa de Nuestra Señora de la Victoria*, so called because of the Victory *Cortez* gained in 1519 against those of the Country, when he went to the Conquest of the Kingdom of *Mexico*. It was called *Potonchan* when it was besieged, taken and sacked by *Cortez*; and it is observed, this was the first City in *America* which defended it self, and which suffered under the *Spaniards* Sword.

YUCATAN is the last Province of the Audience of *Mexico* towards the East. It is a *Peninsula* of about 400 Leagues circuit, situate between the Gulphs of *Mexico* and *Honduras*. The *Isthmus* which joyns it to the Main Land, is not above 25 or 30 Leagues over, from whence the Country continues enlarging it self from 50 or 75 Leagues breadth, and ends at *Cape de Cotoche*, which regards towards the East *Cape St. Anthony* in the Isle of *Cuba*, at the distance of 60 and odd Leagues.

The Coasts of *YUCATAN* are very much cumbered with little Isles, which often prove dangerous for Ships; but covered with abundance of *Sea-Fowl*, which those of the Neighbouring and far distant Countries come to chase. The Isle of *Cozumel*, to the East, hath formerly been famous for its Idol *Cozumel*, which all the People of the Neighbouring Continent went to adore.

And

And it was in this Isle, or the Continent near unto it, that *Baldivius* unfortunately saved himself, having been Shipwreckt near *Jamalca*, he had taken a little Boat (like to those used by *Fisher-men*, wherein going with about 20 of his Men, he was brought hither by the Sea; but no sooner had he set foot on Land, but he and his Men were seized by the Natives; who immediately led them to the Temple of their Idols, where they presently offered up, or sacrificed and ate him and four of his Men, and the rest they reserved till another time. Among these, *Aguilar*, who had seen the Ceremony, escaping with some others, fled to a *Cacique*, who treated him courteously for many years, during which time some died, others married in the Country. *Aguilar* in the end was fetched thence by *Cortez*, who was of no small use unto him in his Conquest of *Mexico*, because that he had learned their Tongue. The Air of *Yucatan* is hot, the Country hath scarce any Rivers, yet wants no Water, being supplied every where with Wells; within the middle of the Land are to be seen quantity of Scales and Shells of *Sea-fish*, which hath made some believe the Country hath been overflowed. They have scarce any of the *Corn* or *Fruits* of *Europe*, but some others of the Country; and quantity of *wild Beasts*, principally *Stags* and *wild Bears*; and among their Fowls, *Peacocks*. They have yet found no *Gold*, much less *Latten*; which makes it appear, that it is not true, that the *Spaniards* found here Crosses of *Latten*, there being none in all *America*. The Cities of *Yucatan* are four, *Merida*, *Valladolid*, *Campeche*, and *Salamanca*. 1. *Merida*, is the Metropolis, being the Seat of the Bishop and Governour for *Tavasco* and *Yucatan*, distant from the Sea on each side 12 Leagues: The City is adorned with great and ancient Edifices of *Stone*, with many Figures of Men cut in the Stones; and because they were resembling those which are at *Merida* in *Spain* that name was given it. 2. *Valladolid*, beautified with a very fair Monastery of *Franciscans*, and more than 40 thousand *Barbarians* under its Jurisdiction. 3. *Campeche*, situate on the shoar of the Gulph; a fair City of about Three thousand Houses, and adorned with many stately and rich Structures, which in 1596 was surprized and pillaged by the *English*, under the Command of Captain *Parker*; who carried away with him the Governour, the Riches of the City, and many Prisoners; besides, a great Ship laden with *Hony*, *Wax*, *Campeche-Wood*, and other rich Commodities.

The Conquest of the Kingdom of *Mexico* was much easier to the *Castilians* than that of *Peru*; the Kingdom of *Peru* being Hereditary, and its *Incas* loved, and almost adored by their Subjects; the Kingdom of *Mexico* being Elective, and its Kings hated, if not by those of *Mexico*, yet by all the neighbouring Estates, and envied by those might aspire to the Royalty. This diversity was the cause that *Moteczuma* died, and the City of *Mexico* taken, there was nothing more to do or fear as to that Estate. In *Peru*, after the death of *Guascar* and *Atabalipa*, and some other *Incas*, the *Spaniards* could not believe themselves safe so long as there was any remainder of the Race of these *Incas*; which made them under divers pretexts persecute, banish, and put them to death. And so much for *Mexico* or *New Spain*.

The Misfor-
tune that be-
fel *Baldivius*
here.

The Air of
Yucatan.

What it yield-
eth.

Its Cities.

The Audience of GUADALAJARA, or NEW GALLICIA.

THE Audience of GUADALAJARA, or Kingdom of NEW GALLICIA, makes the most Occidental part of New-Spain, and contains the Provinces of Guadalajara, Xalisco, Los Zacatecas, Chiametlan, Culiacan, and New-Biscany; some others add Cibola, and others likewise California, Quivira, Anian, &c. that is, the Castilians pretend to extend their Power to the farthest part of this New World.

The Province of Guadalajara hath only two Cities or Colonies of Spaniards, viz. Guadalajara, and Santa Maria de los Lagos, of which, the first is the chief of the Province, built in 1531 by Nonnez de Guzman, after he had finished his Conquest. It is the residence of the Kings Treasurers; dignified with the Courts of Judicature, the See of a Bishop; beautified with a fair Cathedral Church; a Convent of Augustine Friars, and another of Franciscans. It is situate in a pleasant and fruitful Plain, and watered, with divers Fountains and little Torrents not far from the River Baranja; the neighbouring Mountains having furnished them with Materials for their Buildings. Santa Maria de los Lagos was built by the same Guzman, and made a place of great strength, only to hinder the Incursions of the Chichimeques, who are a barbarous and untamed sort of People, who border upon them towards the North-East; who live upon the Spoils of other people, harbouring in thick Woods and private Caves for the better obtaining their Prey; which said Town keeps them in such awe, that they dare not molest them.

The Air of this Province is temperate and serene; except it be in their Summer, which is much troubled with Rains. The People (as generally throughout all Gallicia) are crafty, very docil in matters of Religion, inconstant, impatient of labour, much given to pleasures, delight in strong Drinks; their habit for the most part is a Shirt of Cotton, over which they wear a Mantle, which they fasten about their Shoulders. They are of a good Stature, and well proportioned, little subject to sickness, nor knowing what the Plague is, they ordinarily living 100 years. The Country is rather Mountainous than Plain, well furnished with Mines of Silver, Copper, Lead, and Margarites, &c. but none of Gold, Iron, or Steel: The Plains tilled yield ordinarily 100 for one of Corn, and 200 for one of Mayze; they have much Pulse, many Olive-trees, whose Fruit is often spoiled by the Ants, as their Grains are by Pies. These Pies are no bigger than our Sparrows, but in such quantity, that where they alight, in a little time they devour the whole Crop. Almost all the Fruits of Europe are here found in great plenty, which for goodness surpass those of Spain. Their Pastures likewise are rich, and feed abundance of Cattle.

In the Province of XALISCO are the Cities of Compostella, the Metropolis of the Province, built by the said Guzman; once a Bishops See, till removed to Guadalajara; built in a Plain, but so barren, that it will scarce produce food either for Man or Beast, and with the disadvantage of so bad an Air, that made it to be soon left. La Purification, a small City, built also by the said Guzman, seated near the Port of Natividad on the Sea-side. And lastly Xalisco, so called from the Province; once of some account till destroyed by the said Guzman.

North-East of Guadalajara and Xalisco are the Provinces of CHIAMELAN, whose chief City is St. Sebastian, seated on a River of the same name; nigh to which are many rich Silver Mines. The Province of CULIACAN, whose chief Cities are St. Michael, seated on the River of Women, built by Guzman, and Piastra seated on a River so called, about two days Journey from the Sea; well built, and of good esteem till the great damage it received from the Spaniards in their Conquest. And lastly, the Province of CINALOA, whose

Its Provinces.

The Province of Guadalajara, and its Cities described.

The Air of this Province. The Inhabitants, &c.

Its fertility and commodities.

The Province of Xalisco.

The Provinces of Chiametlan, Culiacan, and Cinaloa described.

whose chief City is St. John, an ancient Colony of Spaniards. There are every where rich Mines of Silver, plenty of Provisions, Fruits, Mayze, Pulse, and Cotton: their Inhabitants are great, strong, and warlike; and particularly, in Cinaloa, where they have made the Spaniards abandon the City of St. John, who have rebuilded other-where that of St. Philip and Jacob.

North of Guadalajara are the Provinces of LOS ZACATECAS, and new BISCANT. Account is made of four Colonies in Los Zacatecas: 30 Towns and 4 famous Lodges near the Mines, of which the principal are Los Zacatecas, inhabited by Spaniards, who have here a Convent of Franciscans: Avino, Sombravino, St. Martin, and possibly St. Luke. The Cities are Xeres de Frontera, Erena, Nombro de Dios, besides that in the Isthmus of Panaman and Durango. There are no Cities spoken of in New Biscany, but only excellent Mines of Silver, at St. John, Santa Barbara, and at Endes, which they esteem the best, built only for the benefit of the Silver Mines, which the Spaniards enjoy. The Zacatecas want both Water and Food, except towards Durango and Nombro de Dios: New Biscany hath Cattle and Grain. All these Provinces hitherto are not only of the Audience, but likewise of the Bishoprick of Guadalajara.

Above, and Northward of New Gallicia and the Audience of Guadalajara, we have quantity of People and Provinces little known: we call them in general New Mexico, because esteeming these quarters likewise under the name of Mexico, they make that part of Mexico latest known; others pass them all under the name of New Granada, and place here the City of Granada, which Herrera makes in Cinaloa; others in Cibola, and others in the Kingdom of Mexico taken particularly: so little assurance is there of the Relations of these quarters. However, here is observed divers People very different in their Languages, Manners, and Customs; some having fixed and settled Habitations, others wandering after their Flocks: among the first there are some that have many Cities, some containing in them about 30, 40, or 50 Thousand Inhabitants, and in these Cities the Houses are built of Stone several Stories high. New Mexico, taken particularly; hath 10 or 12 of these Cities, whose Houses have their Chambers, Halls, Parlours, and other Conveniences, very populous; among which the City called New Mexico is the chief, distant from Old Mexico about 500 Leagues, being the residence of the Governour, where the Spaniards keep a Garrison, and have changed its name to St. Fegie. Cibola hath seven Cities, each of 3, 4, or 500 Families, and (with those which remain in the Field) may make likewise 8 or 10 thousand Men. All these Inhabitants are addicted to War, their Country tilled, and abounding in all Victuals.

QUIVIRA hath not many Houses, nor over stored with People, and those that do inhabit here are very rude, and barbarous; the Men cover their Bodies with the Skin of an Ox ill accommodated, the Women only with their Hair, which they wear so long, that it serveth them instead of a Veil to hide their nakedness: they live almost altogether on Raw-flesh, which they devour rather than eat, swallowing it without any chewing: They live in Hoards or Troops, resembling those of the Tatars; not having any certain abode, but remove from one place to another, staying where they find good Pasture for their Cattle.

ANIAN is yet poorer than Quivira: the Spaniards have long since over-run both the one and the other, but finding nothing of worth, neglected them; but after all, there are Opinions much contrary, touching the temperature, fertility, and situation of these two Provinces; some making them cold and barren, others temperate and good.

CALIFORNIA hath a long time been esteemed to be only a Peninsula; but the Hollanders having taken on these Seas a Spanish Vessel, which had rounded it, and made the Chart of it; who saw that it was an Isle, which extends itself from South-East to North-West, and from the 23rd degree of Latitude, to beyond the 45th, lying along the West side of America. Its length is of 700 Leagues: Its breadth under the Tropic of Cancer, not above 20 or 25 Leagues; from whence it still enlarges it self unto 190 Leagues towards

The Provinces of Los Zacatecas, and New Biscany.

New Mexico described.

Province of Cibola.

The Province of Quivira described. Its Inhabitants

The Province of Anian described.

California described.

wards the 40th degree of Latitude. The Air hath been found Cold, though in a situation which ought to render it more hot, than temperate. The Country ill peopled, they fish for Pearls in *Mer Vermejo*, and on the East of the Coasts of *California*, and likewise along and on the Coasts of *New Granada*, or *New Mexico*.

Mark de Niza, a Franciscan, his Relations of this place.

Mark de Niza, a Franciscan, made a Voyage into these parts in 1529, and at his return recounted Marvels of what he had seen and understood; of People that wore about their Heads pieces of *Mosher of Pearl*, of divers Provinces rich in Gold, of Cities and Houses well built, whose Gates were adorned with *Turquoises* and other Stones. That the chief City of *Cibola* was greater than *Mexico*: That the Kingdoms of *Marata*, *Acu*, and *Tontec*, were likewise very rich and powerful.

Also the description of these parts by Vasque de Cornada.

The Relation of this Fryar caused *Mendoza*, Vice-Roy of Mexico, to send *Vasque de Cornada*, Governour of *New Galicia*, to search out the truth. Who, far from finding the Riches he hoped for, found only people naked, very poor, rude and barbarous; some Cities he found indifferently well built, but sadly furnished; assuring us that the Kingdoms of which the Fryar had made so much account of were almost all Imaginary. *Tontec* being only a Lake, about which there were some few Habitations: *Marata* a thing invisible, and *Acu* a beggerly Town, in esteem amongst them, only gathered some Cotton. Possibly the Fryar said more than he had seen, that he might incite the Spaniards to send some Colonies hither, and have the Means to convert those People: And *Cornada* less, because he found not that present profit which he did in his Government: however it be, this contrariety, with those we have observed touching the City of *Granada*, and the Provinces of *Quivira* and *Ani*, may make us see how dangerous it is to trust those that come from parts so remote and unknown, whatever specious or fair Habit they wear, or whatever good Tongue they have, or whatever protestations they make of Truth.

The Audience of GUATEMALA.

THE Audience of *GUATEMALA* is between the Seas *Del Nort*, and *Sud*; and between divers *Isthmus's* and *Tongues* of Land, which are found in the most Southernly part of *America Septentrionalis*. Its Provinces are *Guatemala*, *Soconusco*, *Chiapa*, *Vera-Pax*, *Honduras*, *Nicaragua*, *Costarica*, and *Veragua*.

Its Provinces.

The Province of Guatemala, with its Cities, described.

GUATEMALA and *SOCONUSCO* are on the *Mer del Sud*, *Chiapa* within Land; *Vera-Pax* and *Honduras* on the *Mer del Nort*; *Costarica*, *Nicaragua* and *Veragua*, on both Seas. *Guatemala* hath 150 Leagues along the Coast, and advanceth within Land 30 or 40 Leagues. Here were built the Cities of *St. Jago*, of *Guatemala*, *St. Salvador* or *Curcatlan*, *La Trinidad* or *Conzonate*, *St. Michael*, and *Xeres de la Frontera* or *Chuluteca*; they are all upon, or little distant from the Sea; *Guatemala* is more advanced within Land, and yet the principal, being the Seat of the Bishop and Court of Audience. In 1541 this City was almost overwhelmed by a deluge of boiling Water, which descending from that *Vulcan* which is above and near the City, threw down, and tumbled over all that it met with, as *Stones*, *Trees*, and *Buildings*; where it stifled many People, and among the rest, the Widow of him who had conquered and so ill treated that Province. The City was rebuilt farther to the East, and may have near 100 Houses, about 1000 Inhabitants, and its Country about 25000 *Indians* Tributaries. A certain private Person had once a strange phancy came in his head, that there was a very rich Mine of Gold in this *Vulcan* of *Guatemala*, and that he needed but to find some way to put down a *Cauldron*, and draw out what he could wish for, as one doth Water out of a Well; he undertook the enterprize, and caused to be made great Chains of Iron, and a great *Cauldron*, so strong, that he believed the fire could not damage it; he caused a way to be made to carry to the

A strange phancy of a private Person in these parts, and the event thereof.

the top of the Mountain his *Chains*, *Cauldron*, and *Machins*, which were to serve to let down and draw up his *Cauldron* full of Gold, which he believed to coyn at the bottom of the Mountain; but he found the Fire so violent, that in less than a moment of time, he had neither *Chains* nor *Cauldron*: Which so perplexed him with grief and shame to see his own folly; having not only spent all his own Estate, but the best part of his Friends; so that he would have precipitated himself into the Mountain, had he not been hindered; but in a short time he died for anger and grief.

The Country is colder than the situation may bear, and subject to Earth quakes; hath excellent *Balms*; liquid *Amber*, *Bezoar*, *Salt*, *Grains*; is full of rich Pastures, which are well stocked with Cattle, plenty of Cotton Wool, excellent *Sulphur*, Abre of *Medicinal Drugs*; and abundance of Fruits; among others *Cacao* in such great plenty, that it yearly lades many Vessels, which are transported to other places. The Country is more inclining to Mountains than Plains, but well watered with Rivers. The People are pusillanimous and fearful; the Men are expert at the Bow, and the Women at the Distaff: they are more civil, and embrace *Christianity* more than their neighbouring Countries do, and are willing to receive Advice from the Spaniards, who are their Masters.

SOCONUSCO hath only the little City of *Guevetlan* on the Coast; and nothing of particular or worthy to be noted in it; only it hath some *Grains*; feeds some Cattle, its Rivers have Fish; and its People more barbarous and rude.

CHIAPA is not over fertile in *Grains* nor *Fruits*, but the Country well clothed with lofty Trees; and some of which yield *Rozin*, others precious *Gums*, and others bear Leaves, that when they are dried into powder make a Sovereign Plaster for Sores. The Country is full of Snakes, and other venomous Creatures. Places of most note in this Province are 1. *Ciudad-Real*, built by the Spaniards, situate in a round Plain at the Foot of a Hill, and begirt with Mountains resembling an *Amphitheater*; now the residence of a Bishop, and governed by City Magistrates, by them called *Alcaldes*. 2. *Chiapa*, seated in the fruitfulest Valley of the whole Country. 3. *St. Bartholomew*, remarkable for having near it a great Pit, or opening of the Earth, into which if any one casts a Stone, though never so small, it makes a noise so great and terrible as a clap of Thunder. 4. *Casapualca*, a small Town, but famous also for a Well it hath, whose Waters are observed to rise and fall according to the flowing and ebbing of the Sea.

Among the Bishops of *Chiapa*, one was *Bartholomew de las Casas*, of the Order of *St. Dominique*, who having seen the Cruelties with which the Spaniards treated the People of *America*; endeavoured by divers Remonstrances to hinder it for the future, and to that end went into Spain; but finding no redress, wrote and printed a Treatise of their Cruelties, which was endeavoured to be suppressed; but some Copies escaping, were translated and reprinted in Italian, and other Languages.

There are in this Relation things that can scarce enter into the belief of man: He makes account, that in divers parts of *America* and its Isles, the Spaniards had put to death in his time (which was fifty years after their Invasion of it) 12 or 15 Millions of Persons, by several cruel and unchristianlike Deaths, as by Fire, Hunger, Boiling of them, impaling them; by the *Indian* and *Sword*, as also in excessive Labours in the working in their Mines, in carrying of heavy Burthens, like Horses, and the like Cruelties. He also saith, that they treated those that remained worse than Slaves; they would cut off the Ears of some, others Noses or Hands; sometimes cutting them alive into pieces and quarters to feed their Dogs; and learn them to devour these poor *Americans*; and if they found one of these Dogs killed, or a Spaniard knockt on the head in the Field, they would hang up a dozen of these miserable People, in honour (as they said) of the *Twelve Apostles*; or else put the neighbouring Country to Fire and Sword. He saith, that it was ordinary with them to abuse Boys, to deflower Virgins, and to ravish Women whom

The fertility of this Province, with its Commodities and Trades

its Inhabitants

The Province of Soconusco described.

The Province of Chiapa described.

its chief places.

Some memorable actions of Bartholomew de las Casas Bishop of Chiapa.

Quaint and cruel cruelty towards the Natives.

Whom they sold afterwards for a *Cheese*: and oft-times a hundred *Men* and *Women*, and sometimes five hundred, and more, for an *Ass* or a *Horse*. He observes, that a certain *Chacique* having escaped out of *Hispaniola* into *Cuba*, to shun the cruelty of the *Spaniards*, they becoming after Masters of *Cuba*; and this poor *Chacique* falling into their hands, they condemned him to the Fire, where being incited by a *Fryar* to turn *Christian*, that at least after this life he might be saved in *Paradise*; when he understood that it was a place that the *Spaniards* went unto, he would not be a *Christian*, nor go thither, so much he dreaded them. And he affirms, that the most part of these *Murthers*, *Burnings*, and *Pillages*, were voluntarily done to terrify others, and make themselves absolutely obeyed; which they might as well have gained by fair means and gentle usage. But let us return to what concerns our Audience.

Near *Chiapa* are several Fountains, which have some singularities; as that aforesaid, which rises and falls with the flowing and ebbing of the Sea, though far from it. Another, that for three years together increases, though there be never so little Rain; and for three years after diminisheth, though there be never so much: and so continues from three years to three years. Another there is, that falls in Rainy-weather and rises in dry. And there is another that kills *Birds* and *Beasts* that drink of it; yet cures those Sick which demand violent Remedies. But we should swell too large, if we should speak of all Singularities found in *America*.

HONDURAS and *NICARAGUA* are two great Provinces. *Honduras* is more than 200 Leagues long, and near 100 broad. *Nicaragua* little less. *Honduras* communicates its name to the Gulph which lies on *Mer del Nort*: Its chief places are, 1. *Valladolid*, of near an equal distance between the two Seas, situate in a pleasant and fruitful Valley, and on the banks of the River *Chamalucon*. 2. *Gratias di Dios*, situate on a high ground, 30 Leagues Westward of *Valladolid*, and near the rich Mines of Gold of *St. Pedro*, and serveth for a place of defence for those that work in the Mines, against the *Savages*. 3. *St. Juan del porto de los Cavallos*, once a famous Port, but through its Ruins is uninhabited. 4. *Truxillo*, seated on the ascent of a little Hill betwixt two Rivers, in a rich and fruitful Soil, with the benefit of an excellent Port. 5. *St. George de Olancho*, seated in the Valley of *Olancho*, noted for the *Golden Sands* that the River *Guayape* was said to yield. The Country hath pleasant Hills, and fruitful Valleys for *Grains*, *Fruits*, and rich *Pastures*: It is well furnished with *Rivers*, hath Mines of Gold and *Silver*; but its greatest profit is made by *Wool*, which it transports to other places.

NICARAGUA hath five Colonies of *Spaniards*; the Country is destitute of Rivers, except that part which is towards *Veragua*, called *Costa Rica*; the want whereof is supplied by a great Lake which ebbs and flows like the Sea. Upon its Banks are seated many pleasant Cities and Villages, which are inhabited by the *Spaniards* and *Indians*; a Lake well stored with Fish, and as full of *Crocodiles*. The Air of the Country is healthful, though hot, the Soil fruitful and pleasant; it hath *Fruits*, *Cows*, *Hogs*, *Sheep*, *Turkies*, *Pollain*, and so many *Paroquets* that they are hurtful: It yieldeth not much Grain, it hath plenty of *Cotton-Wool* and *Sugar-Canes*, and towards *Segovia* are some Mines of Gold and *Silver*. Its Inhabitants are of a good stature, active, very conformable to the *Spaniards* as well in Behaviour as Apparel. Its chief places are, 1. *Leon*, situate on the aforesaid Lake in a Sandy soil, but begirt with Woods: It is the residence of the Governour, as also the Seat of a Bishop. 2. *Grenada*, on the same Lake, beautified with a fair Church and a strong Castle, seated in a fruitful Soil, and well stored with *Sugar-Canes*. 3. *Jaen*, seated at the end of the said Lake. 4. *Segovia* the New is farther within Land, rich in Veins of *Silver*. 5. *Realejo*, near the *Mer del Sud*, having the benefit of a good Port, by reason of which it is inhabited for the most part by *Shipwrights*, *Mariners*, and those that depend upon Naval Affairs.

COSTA-

Remarkable
Fountains.The Province
of Honduras,
with its chief
places, de-
scribed.The fertility
of the Pro-
vince, with its
commodities.The Province
of Nicaragua
described.Its fertility in
its Fruits, Cat-
tles, Fowls, &c.

Its Inhabitants

Its chief places.

COSTARICA, and *VERAGUA*, are the two most Eastern Provinces of the Audience of *Guatemala*. In *COSTARICA* are the Cities of *Carthage*, seated between two Seas, where there are some places, which serve it for Ports: *Aranjues* and *Nicoya* are on the *Mer del Sud*, *Castro de Austria* within Land.

VERAGUA, hath towards the East the *Isthmus* of *Panama*, and was once under the Chamber of *Panama*; though this City be esteemed in *America Meridionalis*, and *Veragua* in the *Septentrionalis*. There are placed in this Province four or five Cities of *Spaniards*, viz. 1. *La Concepcion*, seated on the *Mer del Nort*, and is the Residence of the Governor. 2. *La Trinidad*, seated also on the said Sea. 3. *Sancta Fe* within Land, being the place where the *Spaniards* melt, refine, and cast their Gold into Bars and Ingots. 4. *Carlos*, seated on the *Mer del Sud*. And 5. *Parita*, seated on the said Sea.

The Country both of the one, and the other Province, is rude, mountainous, and little fertile, only for *Mayze* and Pot-herbs. In supply thereof, they have exceeding rich Mines of Gold and *Silver* in their Mountains, and *Sand-gold* in their Rivers; but there remain yet some Natives in these quarters, who still molest and annoy the *Spaniards*, killing and eating them when they can catch them.

The Isles ANTILLES, or CAMERCANES.

Between the two *America's Septentrionalis*, and *Meridionalis*, and before the Gulph of Mexico, are abundance of Islands of different greatness; *HISPANIOLA*, and *Cuba* are the greatest; *Jamaica*, *Boriquen*, and others of the middle fort; the rest, much less.

HISPANIOLA, is in the middle of these Isles: near 200 Leagues from West to East; and 50 or 60 from South to North. *Christopher Columbus* was the first that made discovery of this Isle, in his first Voyage that he made in 1492. being conducted thither by some of the Inhabitants of *Cuba*. There remain 10 Colonies of *Spaniards*, of which, 1. *St. Domingo* (built by *Bartholomew*, Brother to *Christopher Columbus*) is the chief, pleasantly seated, its houses well built, which for the most part are of Stone, its Haven is large and safe for Ships to ride in, it is enriched by the Residence of the Governour, the Court of Audience, the See of an Arch Bishop, the Chamber of Accounts, the Treasury Court; and, besides many Convents of Religious Houses, a Hospital endowed with a large yearly Revenue, a place of great Trade, till the taking of *Mexico*, and the discovery of *Peru*; since which time it hath much decayed, nor hath it yet recovered itself of the great loss and damage it sustained by *Sir Francis Drake*, in 1586. It now being Inhabited by not above 2000 Families, of which about 600 are Natural *Spaniards*, the rest *Mestiz*, *Mulatts*, *Negroes*, and *Canaries*. *Porto de la Plata* holds the second place by reason of its Commerce, and is well seated on a commodious Bay. Then 3. *St. Jago de los Cavalleros*, for the beauty of its situation. 4. *El Cotuy* for its Gold Mines. 5. *Salvaleon de Iquey* for its *sugars* and *Pastures*. 6. *Azuaz* likewise for its *Sugars*, being a noted Haven. 7. *St. Maria del puerto* for its *Cassia*. 8. *Monte Christo* for its Salt. 9. *La Concepcion de la Vega*, the foundation of *Christopher Columbus*, for whose sake it was made an *Episcopal See*, which at present is united to *St. Domingo*; and the last of the ten Colonies is *El Zeybo* seated on the Sea shore, but of small account.

So soon as the *Spaniards* were Masters of this Island, they caused to be brought from Spain, *Grains*, *Fruits*, and *Beasts* of all sorts. The *Grains* would not thrive in the Plains, by reason of the richness of the soil, the stalks taking away all the force of the seed; but when they found out the reason, they sowed them on hills, and there where the land was lean; so that then they yielded a great increase. The *Fruits* became excellent; and the *Beasts* multiplied in such manner, that they grew wild for want of proper owners, being hunted to death by

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The Province
of *Costarica* de-
scribed.The Province
of *Veragua* de-
scribed.Hispaniola.
Christopher Columbus the first
discoverer of
this Ill.
Its Colonies.This Isle stocked
by the
Spaniards.

any one, only for their skins. The *Sugar Canes* brought from the *Canaries* yielded exceeding great profit. The Country for the most part flourishing and beautiful; the *Trees* and *Meadows* being always in their Summer livery: and the soil so fertile; that in the space of sixteen or eighteen daies, *herbs*, and *roots* will come to their perfection and ripeness, but the Mines of *Gold*, *Copper*, and other *Metals* which remained, are no longer wrought; the *Spaniards* having consumed and perished in them, not only the most part of the antient Inhabitants of this Country, but likewise of the Neighbouring Isles.

The Isle of *CUBA* is longer and straighter than *Hispaniola*, near 300 Leagues from West to East, and from South to North, only twenty five or thirty almost every where, so that in Continent, these two Isles are almost equal, their qualities are likewise in many things correspondent, as in their *Grains*, *Cattle*, and *Fruits*. The Air of *Cuba* is healthful, and its Forrests furnished with the best Wood, for building of Ships: It feeds store of *Pullen*, *Pigeons*, *Tortells*, *Partridges*, *Flamengo's*; whose feathers are white when little, and of many colours when grown great. Its *Rivers* stream down more *Gold*, than those of *Hispaniola*: Its Ports likewise greater and more safe; but yet there are more Rocks and Banks about *Cuba* than *Hispaniola*. For the greatness of the Isle, it hath but few Cities, the chief of which are *St. Jago*, seated in the bottom of a capacious Bay, about two Leagues from the Sea, whose Port is esteemed one of the best of all *America*; being the seat of a *Bishop*, who holds from the *Arch Bishop* of *St. Domingo*; and beautified with a *Cathedral Church*, and some *Religious houses* near the City, and from the *Sierra de Cobre* they fetch *Copper*, yet the City is much ruined, and hath little trade. Towards *Baracoa*, its Mountains yield *Ebony* and *Brasile*; it hath this inconvenience that its Port cannot receive great Vessels. The goodness of the Air the fertility of the Soil, and a pleasant Plain hath made *St. Salvador* the best place of the Island, where they have a great trade; though off from the Coast, Near *Porto del Principe*, a Haven-Town in the North parts of the Isle, there are *Fountains of Bitumen* which they make use of instead of *Pitch*, to caulk their Ships, and the *Indians* for divers Medicines.

The Port of *Havana*, having its entrance straight and deep, receives the Ocean in form of a *Gulph*, capable to receive a thousand Vessels, and secure them from the fury of the Sea, or Winds. The two *Capes* which inclose it, have their Castles to defend the entrance, and a third joining to the City regards the opening of the Port; the *Ships* which return from *New Spain* into *Europe*, assemble together at *Havana*, where they are furnished with all things necessary either for *Food* or *War*; and dispose themselves to depart by the month of *September*, passing by the Channel of *Bahame*, which carries them into the Ocean.

Twenty five Leagues from *Havana*, towards the East, is the Port of *Matanzas*, that is *Massacres*; for that once those of the Country here slew some *Spaniards*. In 1628 *Peters Heyn*, General for the *West India* Company, surprized the Fleet returning to *Spain*, and carried it in to the *West India* Company: It was laden with *Silver*, *Silk*, *Cocheneil*, *Hides*, *Cassonade* or *powder Sugar*, and divers other Merchandizes, all of great value: This Prize was esteemed worth near seven Millions of crowns; yet this great service was but very ill recompensed by the *Governours* of the said Company.

JAMAICA is an Isle of a large extent being from East to West, 170 miles in length, and from North to South where it is broadest about 70, being of an Oval form, and waxing narrower and narrower at both extrem ends. It is seated betwixt the *Tropicks* in the 17 and 18. degrees of *Northern Latitude*, and beareth from off the Isle of *Hispaniola* Eastwards about 35 Leagues. In the midst of the Isle from East to West runs a continued ridge of lofty Mountains which are well stored with fresh *Springs* whence flow the many Rivers that so plentifully water the Island, to the great benefit of the Inhabitants. The Air is observed to be more temperate than any of the *Caribe Isles*, and of as mild a temperature as any place betwixt the *Tropicks*, being always refreshed with cool breezes

The Isle of Cuba described.

Its Fowls.

Its chief places described with some of their rarities.

A Vast Prize taken by Peters Heyn.

Jamaica described.

Its situation, Extent.

Well watered.

breezes, frequent showers, and great dews in the nights, that it may be deemed Temperate, and by its continual verdure exceeding delightful. The weather is less certain than in the *Caribe Isles*, the most observable wet seasons are in *November* and *May*, there being no seemable *Winter*, but by a little more rain and thunder in the Winter months; nor is there scarce any sensible lengthning or shortning of the Days or Nights. *Hurricanes* are here never known. This Isle in most parts (especially the North) is of a Fertile and rich soil, and liberally answers the *Cultivators* cost and pains for what is planted: The chief Commodities that it produceth are *Sugars*, which are so good that they out sell those of the *Barbados* 5 s. per cent; *Cocoa* the richest Commodity of the Island. *Indico*, *Cotton*, *Tobacco* but indifferent, *Hides*, *Copper*, great variety of Woods for *Dyers*, also *Cedar*, *Brasileto*, *Lignum vite*, *Ebony*, &c. *Tortoises* in exceeding great plenty, whose flesh is excellent good and nourishing, but those that are troubled with the *French man* it is dangerous to eat; *Salt*, *Salt-Peter*, *Ginger*, *Cod-pepper*, *Pimento* being an excellent *Aromatick Spice*, of a curious gusto, having the mixt tast of divers Spices; *Cocheneil*, divers excellent *Druggs*, *Gumms*, and *Balsoms*, many of which are not yet known by their names. Here are greater abundance of *Cattle*, than in most of the *English Plantations*, as *Horses*, *Cows*, *Hoggs*, *Sheep*, *Goats*, *Asses*, *Mules*, which came from the breed of those put into the Woods by the *Spaniards* when they were first Masters of the Island, which for want of Masters became wild; but since the *English* have had to do here they are much wasted to what they were. The *Bays*, *Rivers*, *Roads* and *Creeks*, are well stored with excellent *Fish* of sundry sorts appropriate to the *Indies*. Likewise great store of *Fowl* both tame and wild, the chief of which are *Ducks*, *Teal*, *Wigeon*, *Geese*, *Turkeys*, *Pigeons*, *Hens*, *Plovers*, &c. Here are great plenty of excellent *Fruits*, as *Oranges*, *Cocanuts*, *Pomegranates*, *Limes*, *Guavers*, *Mammes*, *Alumee-Supotas*, *Avocates*, *Cashues*, *Prickle-Apples*, *Prickle-Pears*, *Grapes*, *Sower-Jops*, *Custard-Apples*, *Dilldoes*, *Plantains*, *Pines*, &c. And *Herbs*, *Roots*, and *Flowers* common to *England* grow here very well. Here are very noxious Beasts or Insects found, those most dangerous are the *Alegators*, some of which are fifteen and twenty foot long; here is also *Manchonele* which is a kind of *Crab*, likewise *Snakes* and *Guianas*, but not poisonous; as also *Musketoes*, and *Merry-wings*, a sort of stinging Flies found very troublesome to the Inhabitants. The Diseases that Strangers are most incident unto are *Dropsies* (occasioned by ill Dyet, Drunkenness, and Sloathfulness), *Calentures* too frequently the product of Surfeits, also Fevers, and Agues; but it is experimentally found that if a good Dyet and moderate Exercises are used, without excess of Drinking, they may enjoy a competent measure of health; and the reason of the great mortality of the Army at their arrival, was the want of Provisions, together with an unwillingness to labour or exercise, joyned with discontent. This Island is divided into Fourteen Precincts, Divisions or Parishes, many of which are well inhabited, especially the Southern part, so far as the ridge of Mountains, which runneth in the midst, nor are its Southern parts (especially near the Sea) without Plantations, though not so thick as about *St. Jago*; and of late years the Island is much increased in its Inhabitants and Plantations, being likely to prove the Potentest Colony the *English* are Masters of in *America*, being able to bring into the Field upon occasion about eight or ten thousand men. This Isle abounds with goods *Bays*, *Roads*, and *Harbours*, the chief amongst which are *Port Royal* formerly *Cagway*, seated on the extrem end of that long point of Land which makes the *Harbour*, which is exceeding commodious for Shipping, and secured by a strong Castle, and land lockt by a point of land that runs twelve miles South-East, from the main of the Island, having the great River that runs by *los Angelos* and *St. Jago*, falling into it, where Ships do commonly water, and conveniently wood. The *Harbour* is two or three Leagues broad in most places, with good Anchorage, and so deep, that a Ship of one thousand Tun may lay her sides to the Shoar of the point, and load and unload with Planks afloat, which commodiousness doth make it much resorted un-

The Weather.

Its fertility and commodities.

Great plenty of Cattle.

Fish. Fowl.

Fruits.

Herbs and Roots. Hurtful things.

Diseases.

Its division into Precincts or Parishes.

Its chief places. Port Royal.

St. Jago.

Passage.

Port Morant.

Old Harbour.
Port Negril.

Port Antonio.

Savilla.

Melilla.

The Isle Bor-
quem, with its
chief places
described.

unto, and as well Inhabited by the *Merchants, Store-house-keepers, and other Inhabitants*; this being the only noted place in the Isle for Traffick and resort, being said to contain about 12 or 1500 well built houses, which are as dear rented as if they stood in well traded streets in *London*; yet its situation is very unpleasant and uncommodious, having neither *Earth, Wood, or fresh water*, but only made up of a hot loose sand, which renders it more unhealthy than up in the Country, and Provisions are very dear, about 12 miles up in the Land from this Town is *St. Jago, or St. Jago de la vega*, which when the *Spaniards* were Masters of it was large, containing about 2000 houses, which were destroyed and reduced to about 500, when the *English* first seized the Isle, and here the Governour resideth, and where the chief Courts of Judicature are held, which makes it to be well resorted and inhabited, where they live in great pleasure, recreating themselves in their Coaches and on Horseback in the evenings in the *Savana* near adjoining, as the Gentry do here in *Hide-Park*. The present Governour is his Excellency *Charles Earl of Carlisle*, Viscount *Howard of Acropeth*, Lord *Dacres of Gilsland*, one of the Lords of his Majesties most Honourable Privy Council, a person for prudence and noble qualifications every way besitting such a place. Six miles Southward of this Town is seated *Passage* at the mouth of the River, which at six miles course falleth into the Harbour of *Port Royal*; it contains about twenty houses only serving for the convenience of passage from *Port Royal* to *St. Jago*. Its other places are *Port Morant* in the Eastern point, a very spacious, and secure Harbour, and hereabout is a Potent Colony of the *English* seated. *Old Harbour* a good Bay for Ships to ride in. *Port Negril* in the extreme Western point, very commodious and secure to windward, in which Men of War do often ply when they look for the *Spanish Ships*; not far from which place was seated the old Town of *Melilla*, founded by *Columbus*. *Port Antonio*, seated on the North, a very safe Land lockt Harbour, at the mouth of which lyeth a small Isle wholly taken up by the said Earl of *Carlisle*; with divers other good Bays and Harbours along the Coast. Its other chief places are *St. Savilla*, seated in the North part of the Isle, once beautified with a Collegiate Church, whose Chief bore the title of *Abbot*, amongst whom was *Peter Martyr*, who described the History of the *West Indies* by *Decades*. And *Melilla*, seated on the North East, where *Columbus* mended his Ships at his return from *Veragua*.

This Island was of considerable importance to the *Spaniards*, by reason that all his *Plate-Fleet* which comes from *Carthagina*, steer directly for *St. Domingo* in *Hispaniola*, and from thence must pass by one of the ends of this Isle to recover *Havana*, which is the common Rendezvous of this whole *Armado*, before it returns home through the *Gulph of Florida*; nor is there any other way, whereby to miss this Island, because he cannot in any reasonable time turn it up to the windward of *Hispaniola*; which though with great difficulty it might be performed, yet by this means he would lose the security of his said united Fleet, which meet at *Havana*, from all the parts of the Bay of *Mexico*, *Nombre de Dios*, and elsewhere, accompanying each other home.

BORIQUEM, is little less either in Circuit, or Fruitfulness than *Jamaica*. *St. Juan del Puerto Rico* is the Residence of a Bishop, and a Governour: It hath an excellent Port, which sometimes communicates its name to the Island: *El Arricibo*, and *Guadalupe* of *St. Germain*, are the other Cities; all the Isle hath few Ports, it is traversed by a Chain of Mountains, which cut it from West to East; here is found a *White Gum*, which they use instead of Pitch, to caulk their Ships; and instead of Tallow, to make Candles; and for want of other Medicaments, for Wounds and Sores, besides its *Gold, Sugars, and Gayac*; it hath many *Salt-Marches*. These four Isles are the greatest, and chiefest of the *Antilles*; the rest are numerous, and ought to be considered under the names of the *Lucays*, and *Caribes*. The *Lucays* are North of *Cuba*, and *Hispaniola*; of which, *Lucayon* is the chief, the greatest, and the most Northernly of all; *Bahama* gives its name to the Channel, which is between

two in the Isles and *Florida*; a Channel so rapid, that, in despite of the Winds, it carries Ships from South to North, or rather from South-West, to North-East. *Guanabani* is the first Land which *Columbus* discovered near *America*, and named it *St. Salvador*, because he had been in danger to have been cast into the Sea by his own men, in the fear they had, that they should find no Land.

THE CARIBE ISLES.

THE *CARIBES* or *CANIBALS ISLANDS*, are so called from its Native Inhabitants, who were *Canibals* or *Men eaters*, and these are a great Body of Isles forming a Demy-Circle towards *America Meridionalis*, the chief of which are set down in the *Geographical Table*, and which I shall take notice of, and first with *Barbados*.

BARBADOS, the most considerable Colony the *English* are Masters of amongst all the *Caribe Isles*. Its situation is in the North Latitude of 13 degrees 20 minutes; and although but of a small Circuit, not exceeding eight Leagues in length, and 5 in breadth where broadest, yet it is a Potent Colony, and able on occasion to Arm about 10000 Fighting men, which with the natural strength of the Isle, is able to give resistance to the powerfullest Foe. It is exceeding fertile, bearing Crops all the year long, and the trees always clothed in their Summer livery, but the two seasons for Planting is in *May* and *November*, but the *Sugar Canes* are Planted all the year round. And here are found to grow in great plenty excellent Fruits, as *Oranges*, both sweet and sower, *Pomgranates*, *Citrons*, *Lemons*, *Limes*, *Macaws*, *Grapes*, *Juniper Apples*, *Momins*, *Acosous*, *Papayers*, *Mombains*, *Icacos*, *Raspins*, *Cherries*, *Cocos*, *Indian Apples*, *Plantains*, *Bonawees*, *Guavers*, *Castard Apples*, *prickle Pears*, and *Apples*, *Milsons*, both land and water, and *Pine Apples*, the rarest Fruit in the *Indies*. They have great plenty of Fish and Fowl, common with *Jamaica* and other places in the *Indies*, and have also a competent stock of *English Cattle*, and *Horses*, but something dear, by reason they imploy their Grounds better than to breed upon; and most roots, herbs, and seeds, and flowers common with us in *England* are found to thrive, and grow very well. The Commodities that this Isle produceth are *Sugars*, *Indico*, *Cotton*, *Wool*, *Ginger*, *Fustick*, and *Logwood*, but especially, *Sugar*, *Indico*, *Cotton*, and *Ginger*; lading yearly therewith 200 sail of Ships both great and small, to the great enrichment of the Inhabitants, and profit of *England*. This Isle lying so near the *Equinoctial Line*, cannot but be hot, yet not so but that travel and labour is sufferable, and that occasioned by the cool breezes of wind which riseth with the Sun, and bloweth fresher as the Sun moveth up. And the Air is found very moist, so that all Iron-tools are much subject to rust. This Isle is not over plentifully watered with Rivers, or fresh Springs, there being but one that may appropriate that name, or rather a Lake which runneth not far into the Land, notwithstanding which defect the Inhabitants have no want of water, for the Land lying low, and even, there are several Ponds, and most houses have Wells or Cisterns, which holds the rain water. And here is a River called *Tuigh-River*, remarkable for that on the top of the water is gathered an Oyl which is made use of to burn in Lamps. Amongst the Trees here growing, (which for the most part are appropriate to the rest of the *Caribe Isles*) those of most note are the *Cedar*, *Redwood*, *Mastic*, *Locust*, the *Iron wood tree*, also the *Cassia Fistula*, *Coloquintida*, *Tamarind*, *Cassavia*, of which is made their Bread, the *Poyson tree*, and the *Physick Nut*, also the *Calibash*, the *Shell* of whose Fruit serveth like *Goards* to carry liquid things in; the *Mangraß tree*, the *Routon*, of whose Bark is made Ropes, as also Flax which being spun is imployed to several uses; the *Lignum Vite*, and the *Palmeto*. Here are several Insects and Animals, as *Scorpions* as big as *Rats*, but no waies hurtful, *Lizards* so harmless that they frequent the houses.

Barbados.

Its strength.

Fertility.

Fruits.

Fish and Cattle.

Commodities.

Its Trees.

Its Insects and Animals.

Its Division
and Towns.]

ses, and love the company of men; *Land Crabs* in great abundance which are good to eat. Also *Musketoes*, *Cockroches*, and *Merrywings*, which are very troublesome in the night in stinging.

This Isle is severed into Eleven *Precincts* or *Parishes*, in which are fourteen *Churches* and *Chapels*; besides many places which may not improperly be called *Towns*, as composed of a long and spacious street, and beautified with fair houses, and of late years the whole Isle is so taken up, that there is no such thing as any waste ground. Its chief *Towns* are 1. *St. Michaels*, formerly called the *Bridge Town*, or *Indian Bridge*, seated at the bottom of *Carlisle Bay* which is very deep, capacious, and secure, fit to give Harbour for about 500 Vessels at one time. The Town is large and long, containing several Streets, and graced with above 500 well built Houses. It is very populous, being the Residence of the *Governours*, the place of *Judicature*, and the *scale of trade*, where most of the *Merchants* and *Factors* in the Isle have their *store-houses* for the negotiation of their affairs, in the supplying the Inhabitants with such Commodities as they have occasion of, in exchange of theirs the product of the Isle. For the security of the Ships here are two strong *Fort*s opposite to each other, with a *Platform* in the midst which commands the *Road*, all Fortified with great *Guns*, &c. 2. *Little Bristol* formerly *Sprights Bay*, hath a commodious *Road* for Ships, which is secured by two powerful *Fort*s, and is a place well resorted unto. 3. *St. James* hath the convenience of a good *Road* for Ships, which is well secured by a large *Platform* and Fortified *Breast-works*; It is a Town of a good *trade*, well Inhabited, and the more, as being the place where the Monthly Courts for the *Precinct* is kept. And 4. *Charles Town*, seated on *Oyster Bay*, well secured by two strong *Fort*s, with a *Platform* in the midst; this Town having the accommodation of a weekly *Market*, and being the place where the Monthly Courts are kept for the *Precinct*, makes it to be well Inhabited, and frequented. This Isle is of a great strength as well by Nature as Art, being sheltered with *Rocks* and *Shoals*, and where it is not thus defended by nature it is fortified with *Trenches* and *Rampiers*, with *Pallisadoes*, *Curtains*, and *Counter-scarfs*, and for its further Defence hath three *Fort*s, one for a *Magazine*, and the other two for *Retreats*; they have also a standing *Militia*, consisting of two Regiments of Horse, and five of Foot; which are always to be ready at beat of *Drum*, or sound of *Trumpet*. The Inhabitants of this Isle may be ranged under three sorts, viz. *Masters*, *Christian Servants*, and *Negro-slaves*, which are very numerous. The *Masters* for the most part live at the height of pleasure. The *Servants* after the expiration of five years are Freemen of the Isle, and employ their times according to their *abilities*, and *capacities*; and the *Negro-slaves* are never out of *Bondage*, and the Children they get are likewise perpetual Slaves. These poor creatures, although they have such extream hard usage for Dyet, Apparel, or Lodging, and are held to such hard labour, and so ill treated by their *Masters* or *Overseers*, yet are well enough contented with their conditions, and where they meet with kind *Masters* think nothing too much to do for them, so that it is great inhumanity and pity to wrong them. Every *Sunday*, (which is the only day of rest to them, and should be set apart for the Service of God) they employ either in getting of the Bark of Trees, and making of Ropes with it, which they truck away for Shirts, Drawers, or other conveniences, or else spend the day in *dancing*, *wrestling*, or other *meriments*.

Isle of St. Christopher described.

St. CHRISTOPHER S, so called from *Christopher Columbus* the first discover thereof, seated in the *Latitude* of 17 degrees 25 minutes. In Circuit about 75 miles; the soil is light and sandy, and very apt to produce several sorts of *Fruits*, *Provisions*, and Commodities, as *Sugar*, *Tobacco*, *Cotton*, *Ginger*, &c. This Isle by reason of its several great and steep Mountains (in the midst from which spring the Rivers which plentifully water the Land, many of which are hot and sulphurous) with horrid *Precipices*, and thick *Woods*, renders it impassable through the midst. On the Sea side is a *Salt pit*, not far from which is a small *Isthmus* of Land, which reacheth within a mile and a half of

Its Strength.

Its Inhabitants.

of the Isle of *Nevia*. This Isle is very delightful, and of a most delectable Prospect, for if the Eye be directed downwards from the top, it hath a prospect of curious *Gardens*, which gently descend to the *Sea* side; and in regard of the continual ascent of the *Isle*, the lower stage or story doth not debar the eye of the pleasant prospect of that which lyeth at a remoter distance, which is terminated by those high *Mountains*; and that which makes the prospect the more delectable in the several *Plantations*, are the fair *houses* covered with glazed *Slate*. This Isle is divided into four *Cantons* or *Quarters*, two of which are possessed by the *English*, and two by the *French*, which parts are not so well watered as those of the *English*, but better for *Tillage* and not so *hilly*. The *English* have two fortified places, one commanding the great *Haven*, and the other a descent not far from *Point de Sable*; and the *French* have four strong *Fort*s, the chief of which Commands the *Haven* and is called *Basse Terre*. And for the better security of each other, constant guard at their *Fort*s are kept. In the parts belonging to the *English*, are five *Churches* for Divine Worship. The chief place belonging to the *French* is at *Basse-Terre*, being a Town of a good bigness, and garnished with well built *houses*, where the *Merchants* have their *store-houses*, and is well Inhabited, here is a large and fair *Church*, also a *publick Hall* for the Administration of Justice, a fair *Hospital* for sick people, and a stately *Castle*, which is the residence of the *Governor*, of a most pleasant situation on the foot of a high Mountain not far from the *Sea*, having spacious Courts, delightful *walks*, and *Gardens*.

NIEVES, or MEVIS not far from *St. Christophers* as before noted; of a small extent not exceeding 18 miles in Circuit; In the midst of the Isle is a Mountain of a great height, but of an easie access, and well clothed with *wood*, and about this Mountain are the *Plantations* which reach to the *Sea-shoar*. Here are divers Springs of fresh water, and one of a hot and Mineral quality, not far from whose Spring head are *Baths* made, which are much resorted unto. It is indifferent fertile, and hath store of *Deer* and other Game for *Hunting*, and is found to produce the same *Commodities* as the rest of the *Caribe Isles*. It is a well Governed Colony of the *English*, and its Inhabitants which are esteemed about 3 or 4000 live a good quiet and contented life, and free from want of *Food*, or *Rayment*; for Divine Worship here are three *Churches*, and for its security hath a *Fort* and a publick *Store-house*. This Isle (as the rest of the *Caribe's*) is troubled with *Mulcheto's*, *Chigos*, *Murigoins*, and other stinging *Flies*, which are found troublesome to the Inhabitants.

Nieves described.

ANTEGO, an Isle about 6 or 7 Leagues in length, and as much in breadth in many places; it is seated in the *Latitude* of 16 deg. 11 minutes, it hath some few Springs of fresh water, but hath many *Cisterns* and *Ponds* for the preserving of *Rain water*; It is encompassed with *Rocks* which makes its access difficult and dangerous. Here are plenty of wild Fowl, and Fish, nor is there any want of tame *Cattle*. It is in the Possession of the *English*, but thinly Inhabited, not exceeding 8 or 900.

Antego.

St. VINCENT, seated in the *Latitude* of 16 deg. about 20 miles in length, and 15 in breadth, of a fertile soil, yielding abundance of *Sugar Canes*, which grow naturally without planting; It affords many safe Roads and convenient Bays for Shipping, is well watered, but the *English* who are Masters of it, have made as yet no great settlement.

St. Vincent.

DOMINICA, seated in the *Latitude* of 15 deg. about 12 Leagues in length, and 8 in breadth; It is very Mountainous, but hath fertile Valleys affording good *Tobacco*, which is the chief Commodity. It is a Colony of the *English*, but not considerable.

Dominica.

MONTSE RAT, In the *Latitude* of 17 deg. a small Isle of about 10 miles in length, and less in breadth, very Mountainous, but interlaced with fertile Valleys. It is much Inhabited by the *Irish*, who have a *Church*.

Montserat.

ANGUILLA, in the *Latitude* of 18 deg. 21 min. about 10 Leagues in length, and 3 in breadth: It is a poor beggarly Isle, Possessed by about 2 or 300 *English*, but said not worth the keeping.

Anguilla.

BAR.

Barbada.

BARBADA, in the *Lat.* $17\frac{1}{2}$ degree, an Isle of no great extent, not exceeding 15 miles in length; of a fertile soil, yet of no account to the *English* who are Possessors thereof.

Santa Cruz.

SANTA CRUZ, Inhabited by the *French*, the Isle is woody and mountainous, and not well provided with fresh waters, and of no considerable note.

Guadaloupe.

GUADALOUE, about three Leagues in length, possessed by the *French*, of good Anchorage in most parts of the adjoining Sea, and of some note for its fresh water, which it furnisheth *Ships*. with in their necessity, to finish their Voyages.

Grenado.

GRENADO, but a small Isle (being not above six miles in length) in form of a *Cressent*, the two horns being not above a mile asunder, it is possessed by the *French*, said to be of a fertile soil, and well clothed with Woods, and hath a commodious Haven.

And now I shall be bold to say that *Hispaniola*, *Cuba*, and the Neighbouring Isles, answer to the *Hesperides* of the Antients. All agree that the *Hesperides* were 40 daies sail from the *Gorgades*, and the *Gorgades* only two from the Coast of *Africa*. The Isles of *Cape Verde* answer to the *Gorgades*, as we have made appear in *Africa*. From these Isles to those of *Hispaniola*, and *Cuba*, is at present 25 or 30 daies sail, which may well be 40 of the Antients; and moreover there is no Isles in the *Atlantick Ocean* beyond these. And when the Antients place these *Hesperides* in one Gulph alone, as *Capella* doth, or in more, as *Solinus* doth, they seem to mean the Gulph of *Mexico*, which contains many other lesser. And if *Pliny* seems to make account but of two *Hesperides*, and others of many more, *Pliny* understands *Hispaniola* and *Cuba* alone, in regard of which the rest are little considerable; *Solinus* and *Capella* intend in general the body of these Islands. But let us proceed to *America Meridionalis*.

A M E R I C A M E R I D I O N A L I S.

The degrees of
Latitude, and
Longitude of
*America Meri-
dionalis*.

A M E R I C A M E R I D I O N A L I S is the most Southern part, or Peninsula of *America*; which extends it self from about the 12 degree on this side of the *Aequator*, unto the 54 beyond it, which are 66 degrees of Latitude: and from the 291, or 92, where is *Porto Viejo*, unto about the 350, where there is *Cape St. Augustin*, which are 57, or 58 degrees of Longitude. It reaches then from South to North, 1650 Leagues; from West to East, little less than 400.

Its bounds.

Its bounds on the North and East, are the *Mer del Nort*: towards the South the *Magellanick Sea*; And on the West, the *Mer del Sud*, or *Pacifick Sea*.

Its form approaches near a Triangle, whose sides are almost equal; from *Porto Viejo* to *Cape St. Augustin* are 1400 Leagues; from *Cape St. Augustin*, to *Cape Freeward* in the middle of the streight of *Magellan*, are 1500 Leagues, and from that *Cape* to *Porto Belo*, 1600. Its situation is for the most part under the *Torrid Zone*, part under the *Antartick temperate Zone*; of that which is under the *Torrid Zone*, the greatest part is beyond the *Aequator*, the less on this side; so that the greatest part of these people have their seasons contrary to ours: The Coasts of this Country are all known more or less, the Inlands very little.

*America Meri-
dionalis* di-
vided into parts.

A M E R I C A M E R I D I O N A L I S may be divided into *PERUVIANA*, and *BRASILIANA*, subdividing *Peruviana* into *Terra Firma*, and *Peru*; and *Brasiliana*, into *Brasile*, and *Paraguay*; the first division is taken by a line which from the mouth of the *Amazona*, goes to seek the utmost part of *Chilit* towards the South, and this line divides *America Meridionalis* into two equal parts; the one belonging almost wholly to the *Castilians* alone, and the other for the most part to the *Portugals*: These have their *Vice-Roy* in *St. Salvador*, a capital City in the Bay of *All-Saints*, and almost in the middle of the Coast of *Brasile*; the other in *Lima*, or *Los Reyes*, that is, the Kings, at present a capital City, and in the middle of the Coast of *Peru*. We

THE

THE

SOUTH

THE

AMERICA SEPTENTRIO

SEA

SEA

THE EQUATOR or EQUINOCTIAL LINE

THE

SOUTH

SEA

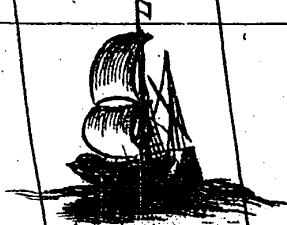
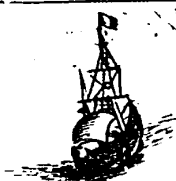
OF

PERU

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THE SEA

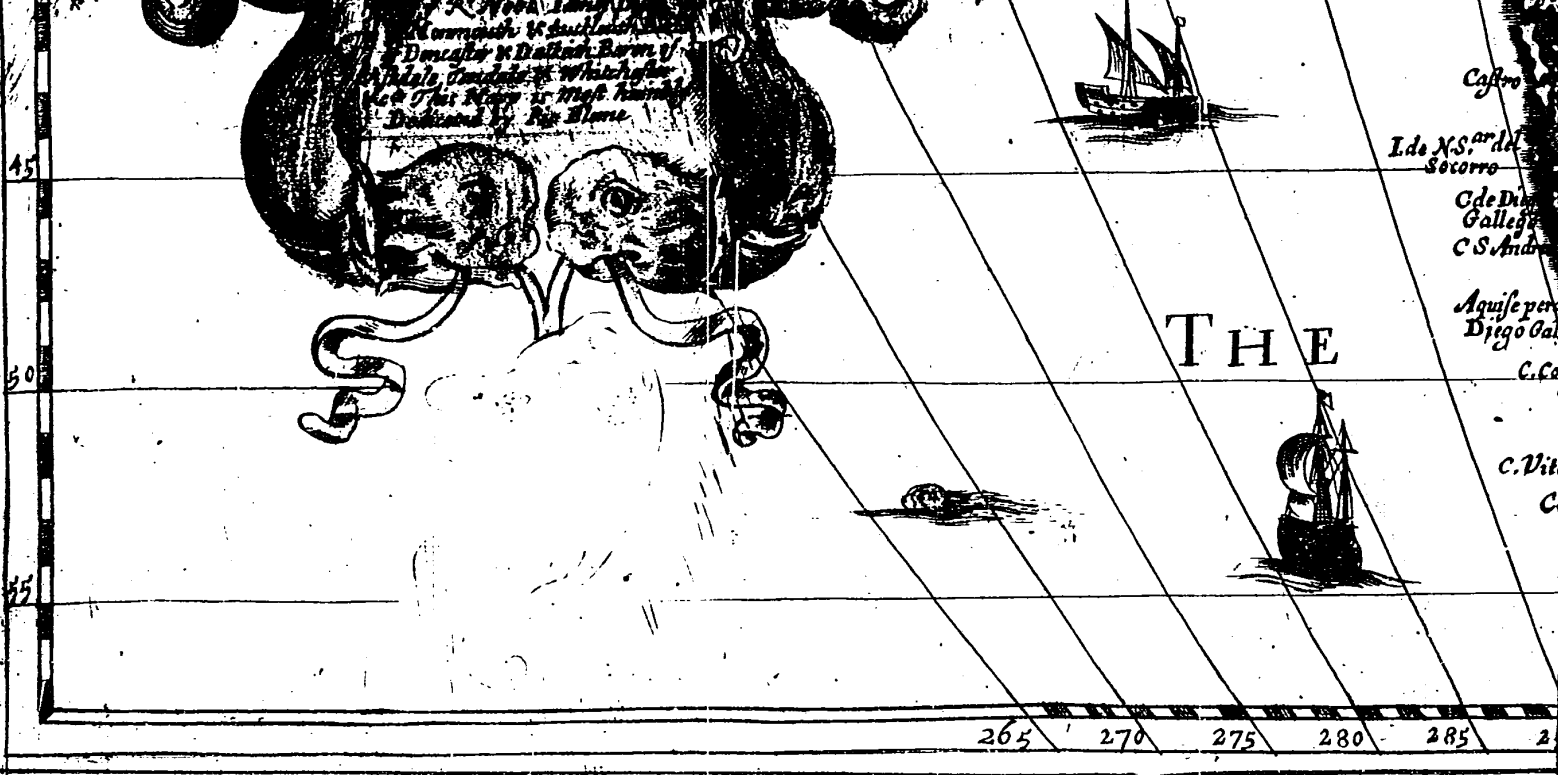


S. Felix P. of Copaya
S. Ambrosio

Titoral I.
Mucallones I.
Pasares I.
B. of Cuzumbo



A
New Mapp of
AMERICA
MERIDIONALE
Designed by Monsieur
Sanson Geographer to the
French King and Publisher
of the English and French
Maps



With a View of the
Coast of the Gulf of California
from the Mouth of the River of
San Pedro de Macoris to the Mouth of
the River of San Pedro de Macoris
Dedicated to the King of Spain

Cabo

I de N. S. ar de
Socorro

C de D. N.
Gallegos
C. S. And

Aguise per
Diego Gal
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C

265 270 275 280 285 2



We may yet divide the *Terra Firma*, into *Terra Firma* and *Guiana*; *Peru* into *Peru* and *Chili*; *Brazil* into the Coast of *Brazil*, and Main Land of *Brazil*; *Paraguay* into *Paraguay*, and the *Magellanick Lands*. Of this *America Meridionalis*, *Brazil* possesses all that is towards the East; *Terra Firma*, and *Guiana*, that which is towards the North; *Paraguay* and the *Magellanick Lands*, that which advanceth towards the South; and *Peru* and *Chili* are towards the West, in regard of *Brazil* and *Paraguay*. The *Castilians* possess almost all *Terra Firma*; nothing at all in *Guiana*; they hold *Peru* and *Chili* between the *Andes* and *Mer del Sud*, scarce any thing beyond those Mountains; besides their *Vice-Roy*, who resides at *Lima* or *Los Reyes*, they have established in what they possess, many *Archbishopsricks*, *Bishopsricks*, &c. for the rule of the Church; many *Audiences* and Seats of *Justice*, for the Secular and Civil Power; and many Governments for the *Militia*.

Parts possessed by the *Castilians*.

The *Archbishops* are those of *Lima*, in *Peru de la Plata*, in *Los Charcas*, and of *St. Fe de Bogota*, in the new Kingdom of *Granada*. The *Archbishop* of *Lima* hath for Suffragans the Bishops of *Cusco*, *Quito*, *Arequipa*, *Truxillo*, and *Guamanga*, all in *Peru*. The *Archbishop* of *la Plata* hath for Suffragans the Bishops of *Baranca*, or *Sancta Cruz* in *La Sierra*, *Ciudad della Pax* in *Chiquiaco*, *St. Jago del Estero* in *Cucuman*, *Buenos Ayres* in *Rio della Plata*, *Nuestra Sacra de l'Assumption* in *Paraguay*, *Panama* in *Terra Firma*, or *Castilla del Oro*, *St. Jago del Estremadura*, and the *Imperial* in *Chili*. The *Archbishop* of *Sancta Fe de Bogota* in new *Granada*, hath for Suffragans the Bishops of *Popayan*, of *Carthagena*, and of *St. Martha* in their Provinces of the same name.

The *Archbishops* and their Suffragans.

In the Dioceses of the *Archbishops* and *Bishops* are a very great number of *Parishes*, *Chapels* of *Ease*, *Monasteries*, &c.

The *Audiences* under the *Vice-Roy* of *Peru* have formerly been those of *Panama* in *Terra Firma*, of *Sancta Fe de Bogota*, in the new Kingdom of *Granada*; of *Quito* and *Lima* in *Peru*, of *la Plata* in *Los Charcas*, and of *St. Jago de Estremadura* in *Chili*: That of *Panama* and of *Chili* subsists no longer, but are reduced into Governments. Of these Governments there are here eleven, viz. *Panama*, *Carthagena*, *St. Martha*, *Popayan*, the new Kingdom of *Granada*, *los Quixos*, *Passamoros*, *los Charcas*, *Tucuman*, *Chili*, and *Rio de la Plata*. *Peru*, wherein are *Lima*, *Quito*, and *Cusco*, is not among these Governments, but depends immediately on the *Vice-Roy*.

But before we leave *America Meridionalis*, let us speak a word or two touching that part which is towards *Mer del Sud*, there is found a great diversity between that near this Sea and that within Land: that which is nearest the Coast is for the most part plain, and above the Plains are many Hills, or rather Mountains; after these Mountains there are other Plains and beautiful Vallies, and then Mountains almost inaccessible, which are those that bound *Chili* and *Peru* towards the East. It scarce rains in the Plains, often in the first Mountains, sometimes between the two ranks of Mountains, and snows often between the two last Mountains: The Soil of the Plains of the first Mountains, and of those between the two ranks of Mountains, are fruitful and pleasant; the last are only Rocks, barren, extremely cold both in Winter and Summer, and almost always covered with Snow. And that which is observable, these Mountains beginning near the Streight of *Magellan* make two Branches; which one in the sight of the other traverse all the length of *America Meridionalis*; and so they are in the same Parallel, yet of quality and Temperament so different, that each Region hath its *Beasts*, *Grains*, and *Fruits* unlike, nay the Merchants transported from the one can scarcely live in the other. But let us proceed to its Parts.

TERRA-FIRMA.

Terra firma, so called by Christopher Columbus.

Its extent.

The Government or Province of Panama described.

Its chief places.

The Isles of Pearls.

Under the name of *TERRA-FIRMA* taken in general, we understand that part of *AMERICA MERIDIONALIS*, most advanced towards the North, and which touches *AMERICA SEPTENTRIONALIS* by the *Isthmus* of *Panama*. This name of *Terra-Firma* is taken from *Christopher Columbus*, not having discovered any but Isles in his first and second voyage; in his third and fourth he made a good part of these Coasts, which judging to be Main Land, that name was given it.

It extends it self from the *Isthmus* of *Panama*, unto the mouth of the *Amazon*, near 1000 Leagues; its breadth, between the *Mer del Nort*, and the *Estates* which are along the *Amazon*, is not above 200 or 250 Leagues, or little more. This breadth being only the quarter of the length is the cause that we have divided this *Terra-Firma* into two parts, of which the most Occidental, and the best for the most part belongeth to the King of *Spain*; the most Eastern, and the least, is almost all in the hands of the Natives; some *Europeans* having only settled some Habitations on the coast, and this may be called *Guiana*; the first is five or six hundred Leagues long, this about four hundred.

The *Spaniards* have established in *Terra-Firma*, many Governments, viz. those of *Panama*, *Carthagena*, *Sancta Martha*, *Rio de la Hacha*, *Venezuela*, and of *Paria* or *Nueva Andalouzia*, on the Sea Coast of *Mer del Nort*; those of *Popayan*, and the new Kingdom of *Granada* are within Land, or on the *Pacificque* Sea.

The Government of *PANAMA*, and which particularly takes the name of *Terra-Firma*, is between the North and South Seas, placed in the *Isthmus*, which joyns the two parts of *America* together. The Countrey is either low and miery, or mountainous and barren, and therefore very unfit to bear *Corn*, only some *Mayze* it yieldeth. Yet here is found good pasturage for *Cattle*, it is well watered with Rivers, some of which stream down *Saad-gold*. Its air is very unhealthy, by reason of the great heats and fogs it is subject unto.

Its chief places are, 1. *Panama*, which takes its name from the Province, as the chief, being the residence of the Governour, honoured with a Bishops See, which is Suffragan to the Arch-Bishop of *Lima*, and the Courts of Judicature, and beautified with three fair Monasteries, as also a Colledge of Jesuites. It is seated on the Sea shore, and is a place of great resort. 2. *Nombre de Dios* once famous, being made the Staple of such commodities as were trucked betwixt *Peru* and *Spain*, which were brought hither by Sea, and so conveyed by Land to *Panama*, from whence they were shipped for *Peru*; and the like was done for those Goods sent from *Peru* to *Spain*; but by reason of the unhealthfulness, as also lying too open to the invasions of the *English* or other Nations, it was removed to *Porto Belo*, a place of great strength, built for that purpose by *Philip* the second, King of *Spain*, seated on the North Sea, distant from *Panama* 16 or 20 Leagues, which makes this passage have a great trade between *Peru* and *Mexico*.

It was once proposed to cut this *Isthmus* to make a communication between the one and the other Sea, but the *Pacificque* Sea being found higher than *Mer del Nort*, this proposition vanished; that the *Mer del Sud* is higher than that of *del Nort*, may be judged by the eye; the Lake of *Nicaragua*, the Rivers of *Paria* or *Orinoque*, of the *Amazones*, together with abundance of others, having their springs near *Mer del Sud*, and discharging themselves into that of *del Nort*, after a long course, which could not be but with a great declension.

At the opening of the Gulf of *Panama*, are the Isles of *Pearls* once famous; the *Pearls* of *Gubagua*, and *de la Margarita* being at most not above eight or ten Carrats: there was found in these Isles from 25 to 30, both round, oval, and in pairs, all excellent; whereas among the others few were found well formed, or without spot.

CAR-

Carthagena described.

CARTHAGENA is a *Peninsula* joyning to the firm Land by a Causeway of 250 Paces, all Sandy. It is a place of great strength, especially since the damage it received by Sir *Francis Drake* in 1585. Its Port is one of the most famous of *America*, where the *Spanish Fleet* that goes to the *West Indies* by Order puts in here, which makes it be of a great resort, and is become very rich: Its Houses are well built, and beautified with a Cathedral Church and 3 Monasteries. The other Cities of this Government are, *St. Jago de los Caballeros*, of old *Tolu*, worthy of note for the most Sovereign Balsom of all these parts, little Inferiour to that of *Egypt*. *Mopos*, near the confluences of the Rivers of *Martha* and *Magdalens*, *Sancta Maria*, and *la Concepcion*. The Air of this Government is moist, scarce healthful, the best is near *Tolu*; there is brought from these quarters *Gold*, *Long-Pepper*, *Dragons-Blood*, excellent *Balm*, *Emeralds*, and *Slaves*.

Its Commodities and Trade

SANCTA MARTHA, so called from its chief City, is a Country unfit for tillage, being Mountainous and barren, yet some they have; it yields good Fruits, and hath *Gold*, *Saphirs*, *Emeralds*, *Jasper*, *Cassidons*, *Brassil-wood*: and the Sea yields *Pearls*. The Air in the Mid-land parts, by reason of the vicinity of Mountains, which are always covered with *Snow*, is very cold, and on the Sea-Coasts as hot and scorching. Its chief places are, 1. *St. Martha*, situate on the Sea-shoar, neighboured by a convenient and safe Haven, which is defended from the fury of the Winds by an high Mountain near unto it; it is honoured with an Episcopal See, but still laments the Ruins it suffered from the *English* by Sir *Francis Drake* and Sir *Anthony Shirley*, in Anno 1595 and 96. 2. *Teneriff*, seated on the Banks of the River *Magdalen*. 3. *Tamalameque*, by the *Spaniards* called *Villa de los Palmas*. 4. *Los Reyes*, situate in the Vale of *Upar*, on the Banks of a rapid and deep River called *Guatapor*. 5. *La Ramada* or *Salamanca*, seated in the same Vale of *Upar*, about which are several Veins of *Brass*. And, 6. *Ocanna*, or *St. Anna*, seated on the River *Cesar*. Among the Governments of *America Meridionalis*, those of *Rio de la Hacha*, of *Venezuela*, and of *Paria*, are of the Audience of *St. Domingo* in the Isle of *Hispaniola*, which is of *America Septentrionalis*; yet their situation makes us describe them here.

St. Martha described, with its Fruits, Commodities, &c.

Its chief places.

RIO DE LA HACHA is East of *St. Martha*, of whose Bishoprick it depends. This Government hath only the City of *Nuestra Señora de la Nieves*, or *de los Remedios*, and sometimes also *Rio de la Hacha*. It yields *Gold*, *precious Stones*, *Salt*, and its Soil is fertile.

Rio de la Hacha described, with its Commodities.

VENEZUELA had its name so given, for its being built on many little Isles, and in a Lake, as *Venice* is. Its Air is sweet and healthful, and the Soil so fertile in all sorts of *Grain* and *Fruits*, and so well stocked with *Cattle*, that it is termed by other Countries a *Granary*, as indeed they find it so, it supplying their wants. It is well watered with Rivers; here is also *wild Beasts* for hunting; and in the bowels of its Earth are rich Mines of *Gold* and other Metals. The other Cities are *Nuestra Señora de Carvalleda*, seated upon the Sea, but its Haven is very unsafe; nigh to this City there are Hills whose tops are said for height to equalize those of *Teneriff*. *St. Jago de Leon*, *Valenza la Nueva*, *Xeres la Nueva*, *Segovia la Nueva*, *Tucuyo*, and *Nuestra Señora della Pax*. *Segovia la Nueva* is more advanced towards the *Barbarian* people of any, its Soil is lean, but in recompence feeds many *Cattle* and *Venison*. The Lake of *Maraycabo*, near 100 Leagues circuit, is esteemed in this Province.

Venezuela described.

PARIA, or *New Andalusia*, is on the River *Paria* or *Orinoque*, and is likewise called *Serpa* and *Comana* from the name of its principal City, which they call *Nueva Cordova*: They fill many *Pearls* along this Coast, before which are the Isles of *Cubago*, *Margarita*, and the *Trinity* or *Trinidad*, formerly so famous for this fishing. These Isles are very barren, scarce affording sustenance for its Inhabitants, which defect is supplied from the adjacent Countries, which made the *Spaniards* abandon them so soon as the said Fishing left them.

Paria described.

N n n 2

The

Popayan de-
scribed.

Its Cities.

Other Cities
in Popayan.Granada, with
its Cities de-
scribed.Gonzalo Xime-
nes, and Ferdin-
and Cortez,
gained great
Riches out of
these parts.Many rich
Mines of Gold,
Silver, and o-
ther Metals.

The Governments of *POPAYAN*, and the New Kingdom of *Granada*, are towards *Peru*; that of *Popayan* is divided into two parts, the one an-
swering to the Chamber of the new Kingdom of *Granada*, the other to that
of *Quito* or *Peru*. The Air of all *Popayan* is generally healthful, and very
fresh by reason of the Mountains. The Land is more proper for *Fruits* and
Pasture, than for *Grains*; and, as in all the neighbouring Countries, here are
likewise many Mines of *Gold* and other *Metals*. The Cities of *Popayan*,
which answer to the new Kingdom of *Granada*, are five, but have formerly
been ten; *Sancta Fe de Antequera*, *Calamanta*, *Arma*, *Sancta Anna de An-
zerma*, and *Cartago*; all upon or near the River of *Sancta Martha*: the other
five were *Antioquia*, *St. Sebastian de la Plata*, *St. Vincent de los Payezes*,
Neyva, and *Villa de los Angeles*. The first was transported to *Sancta Fe de
Antequera*, the others abandoned by reason of the continual Wars made upon
them by the *Paezes*, *Pixos*, and *Manipas*; who could not be tamed. The
Cities of the Government of *Popayan*, which answer to the Chamber of *Quito*,
are nine. *Popayan*, which hath its name common with the name of the Country,
seated on a pleasant River in the midst of a rich Plain, being the residence of
the Governour, as also the See of a *Bishop*, and adorned with a *Cathedral* and
a Monastery of *Friars*. *Cali*, seated at the Foot of a high Mountain on the
Banks of a River, and *Almanguer* on the sides of a plain, but barren Mountain.
Timana, *St. Juan de Truxillo*, and *Guadalajara*, of *Buga* advance towards the
East. *Madrigal*, otherwise *Chapanchica*, *St. Juan de Paslo*, and *Agreda*, or
Malaga towards the West, and approaching near the *Mer del Sud*.

The new Kingdom of *GRANADA* lies almost all along the River *Mag-
delane*, and from its Springs to the middle of its course, are found a great many
Cities, as: *Sancta Fe de Bogata*, the Metropolis of this Kingdom of *Granada*,
the residence of the Governour, and the See of an *Archbishop*; a City well
inhabited by *Spaniards*, as well as the Natives. *St. Michael, de Sancta Fe*,
about 12 Leagues from *Sancta Fe de Bogata*. *Tocayma*, seated on the Banks
of the River *Pati*. *La Palma de los Colimas*, a Town built by the *Spaniards*.
Tunia, built on the top of a Hill, being now a place of great strength, serving
for a Fortrefs against the *Savages*; it is also a wealthy Town, enjoying a good
Trade. *La Trinidad de los Mufos*, seated on a River, of some note by reason
of the Veins of *Chrystal*, *Emeralds*, and *Adamants*, that are in its adjacent
Fields. *St. John de los Linos*, seated in a corner full of Veins of *Gold*, also
Velez, *Tbagua*, *Mariquita*, and *Nuestra Sennora de los Remedios*, and these
four last are on the left hand of the River, the other seven on the right. Distant
from this River, and between the Governments of *Sancta Martha*, and *Vene-
zuela*, are likewise *Pampelona*, rich in Mines of *Gold*, *Cattle*, and *Herbs*.
Merida and *St. Christopher*: *Tudela*, between *la Trinidad* and *la Palma* hath
been transported to *St. John de los Lianos*.

In 1536 *Gonzalo Ximenes* over-run a great part of this new Kingdom of
Granada, and made booty of about 250000 *Pezos* of *Gold*, of which near
200000 were exceeding pure; and besides the *Gold* 1800 *Emeralds* of divers
sizes. In another Incurfion made by *Ferdinand Cortez* into these quarters,
were found five *Emeralds* of a vast price. They were cut into divers fashions;
one into the form of a *Fish*, another into a *Bugle* or small *Horn*, a third into a
little *Bird*, a fourth into a *Bell*, whose Clapper was a large *Pearl*, fashioned
like a *Pear*, and the last into a *Cup*; for which alone a *Genouefe* Lapidary pro-
ffered 40000 *Ducats*, with hopes of gaining great profit by it.

The Air of this Government inclines to Heat, the Valleys have *Grains* and
Pastures, but no *Wine*; the Mountains have many rich Mines of *Gold* and
other *Metals*; the *Silver* Mines of *St. Agatha* are rich, those of *los Remedios*
have store of *Gold*, and there are 12 or 15000 *Negroes* which labour in them.
Those of *Mufos* near *la Trinidad*, and those of *Pampelona*, *St. Christopher*, and
Merida, are likewise of some esteem; but above all, the Mine of *Emeralds*
near *la Trinidad*, where there is a Rock full.

GUIA-

GUIANA, taken in general, comprehends all that is found between the
Rivers of *Orinoque* and of the *Amazons*; from the Mountains which are a-
bove the Lake of *Parima* unto the *Mer del North*. These Mountains towards
the South divide it from what is above the River of *Amazons*: *Orinoque* di-
vides it from *Terra-Firma*, or *New Andalusia*, on the West, and the River of
Amazons from *Brazil* on the East. The length of this *Guiana* is near 400
Leagues, the breadth 150; and in some places 200; and if we would divide
Guiana into *Guiana* and *Caribae*, this last would possess all the Coast, and
Guiana the parts within Land. The Coast hath at divers times been fre-
quented by the *Spaniards*, *English*, *Hollanders*, and *French*, who have all en-
deavoured to establish some Colonies, what in one place, what in another, and
all with design to have commerce with those within the Country, where they
hope to find a new *Peru*: I mean the Kingdom of *Manoa*, or *El Dorado*,
which they esteem very rich in *Gold*. And they have observed exactly the
Rivers, *Gulphs*, and *Capes*, which present themselves on this Coast. Among
these Rivers the fairest and greatest are, *Essequibe*, *Brebice*, *Corretine*, *Marru-
vine*, *Cayanna*, the *Apuruvaca* or *Cape-Ruvaca*, and the *Viapoco*. The Spring
of the *Essequibe*, according to the report of its Inhabitants, is not above a days
journey distant from the famous Lake of *Parima*, and thence takes its course
for 20 days journey to the Sea, into which it discharges it self. It is interrupted
by divers *Cataracts*, which hinders its being navigable for any considerable
way, which causes the Inland Country not to be so perfectly discovered, as it
might be were it otherwise. The *Brebice* and *Corretine* have little less course
than the *Essequibe*, and no fewer *Cataracts*; the last hath its Mouth to the Sea
very large, but not deep. The *Marruvine* is no less than 4 or 5000 Geome-
trical Paces broad at its Mouth, and the length of its course is esteemed to be
30 or 40 days journey. The *English*, who have mounted this River farther
than any others, have observed abundance of Rivers which lose themselves
in it; and say, that here is found the *Sensitive Plant* or *Herb*, which hath this
natural property, to close if never so little touched; and to shut up its Flowers
and fade if the least sprig be took from it, not opening its Leaves till a good
while after. All these Rivers, for the most part, have their *Cataracts* under
the same Parallel, within 4 or 5 degrees of Latitude on this side the *Equator*,
which may make us judge that there is some ridge of Mountains, or at least a
continued Eminence, which makes these Countries within Land, of a higher
situation than those Parts neighboured by the Sea. *Cayanna* hath likewise in
it those Mountains which are near the Lake of *Parima*; and from its Spring
to the Sea, is no less than 100 Leagues in a strait line, and twice as much ac-
cording to its course: It embraces an Isle where the *French* have endeavoured
to settle a Colony, which in time may come to good effect. *Apuruvaca* or
Caperuvaca hath a longer course than *Cayanna*: It forms a great Lake not far
from its Spring, and embraces an Island near its Mouth. When *Harcourt*, an
Englishman, was on this River, he found many People, and those much differ-
ent from one another. *Keymisb*, another *Englishman*, who was with the
worthy Sir *Walter Rawleigh*, who took so much pains to find out the King-
dom of *Manoa*, assures us, that in his time they could find no such People;
which makes it appear, that these People are sometimes on one Coast, and
sometimes on another. There are here found *Paroquetto's*, and other very
rare and beautiful Birds, with pretty *Apes* and *Monkeys*. *Viapoco* hath a
longer course than the *Cayanna*, a shorter than the *Apuruvaca*; and like all
the others of this Coast, suffers a fall 18 or 20 Leagues from the Sea, where it
disburthens it self with other Rivers into a little Gulph of 7 or 8 Leagues wide,
leaving on the Right hand *Cape de Condi*, or *d'Orange*. There is found along
this River *Tobacco*, *Canes* from which *Sugar* may be extracted, and *Shrubs*
which yield *Cotton*: and amongst the Beasts they have *Stags*, *wild Boars*,
tame Swine, and *Beeves* which have no Horns, &c. But let us speak a word
or two of the temperament and quality of the Soil of these Quarters, in which
there is something extraordinary.

The length
and breadth
of *Guiana*.Rivers in *Gua-
na*, with their
Springs, Cata-
racts, length
and breadth.
The *Essequibe*.The *Brebice*
and *Corretine*.The *Marruvine*.*Cayanna*.The *Apuruvaca*.The *Viapoco*.

It

The situation
of Guiana.

It is true that *Guiana* is under, or very near the *Aequator*; that part which stretches most within Land, and the nearest to the *Amazons*, is under the *Equator*: from that line the Coast stretches on this side unto the 8th degree of Latitude; yet the greatest part of this Coast lies under the 4th, 5th, 6th and 7th of these degrees, which is almost in the middle of the *Torrid Zone*, and consequently seems to be in a Climate extremely hot. But the Eastern-winds, which do almost continually blow upon the Coast, the Nights being equal with the Days, the large Rivers which refresh and water the Country, the great Dews which fall, the height of their Mountains, the thickness of their Forests, &c. yield such refreshments as renders this Country one of the most pleasant, and would be made (were it cultivated) one of the best and richest Countries in all *America*: They have two Summers and two Winters, their Summers during the *Aequinoxes*, and their Winters during the *Solstices*; and to speak truth, they have always either Spring or Autumn, their Flowers being always in their beauty, the Trees always in their verdure, and their Fruits fit to gather all the yearlong. The Air is so temperate and healthful, that those of the Country live commonly 100 or 120 years, sometimes 150, without being subject to any disease or sickness. Provisions cost almost nothing, all sorts of Game being had for only hunting; all sorts of Fish are here very plentiful: They have several rich Commodities, as Cotton, Cotton-Thread, and Hamacks or Beds of Cotton, China-wood, green Ebony, white and red Saunders, Dyers-Flood, Brazil, Medicinal Oils, Fallop, Salsaparilla, Turbith, Gayac, Gommegutte, Gum-Arabick, Gum-Eleni; a Balm excellent against the Gout, Torqueses, Emeralds, Stag-skins, Tigers, Otters, and black Foxes; grains of Musk taken from Lizards, Munkeys, Apes and Tamarins, a little Beast of pleasure so beautiful and joyful that one alone hath been sold for 500 Crowns. The Americans themselves loving to play with them, and putting about their Necks collars of Pearls, and Pendants of Stones in their Ears.

The fertility
of the Country.

In the bowels of its Earth are Mines of Copper, Tin, Lead, and Iron, which are very rare in *America*; and to all appearance there are Mines of Gold and Silver; here is also Roch-Alum, Chrystal of the Rock, Azure, and likewise Dragons Blood, &c.

That part of *Guiana* most advanced within Land, and which retains particularly the name of *Guiana*, is very little known; yet here should be the Kingdom and City of *Manoa* or *El Dorado*, of which some have formerly made such account; but not being found at present, is by most believed Imaginary.

The A M A Z O N E.

The Amazon
inhabited by
abundance of
People.

Its beginning,
Springs and
Mouths.
The breadth
of its Channel.

THE River *AMAZONE* is the greatest and swiftest, either in the one or other part of *America*, and it may be said the largest of both Continents: From its Springs to its disburthenings into the Sea is 8 or 900 Leagues in a straight line, and according to its course 11 or 1200; it receives, both on the Right and Left, abundance of Rivers, of which some have 100, 200, 300, others 4, 5, or 600 Leagues course. All the *Amazon* is inhabited by abundance of People, less barbarous than those of *Brazil*, nor yet so much civilized as those of *Pera* were: They eat not one another, for by their Hunting, Fishing, Fruits, Corn and Roots, they are furnished with what is needful either for Meat or Drink: they have some Idols particular to them, but pay them no adoration, contenting themselves to expose them to publick view when they enterprize any Affair. The *Amazon* begins at the Foot of the *Cordillier* Mountains, 8 or 10 Leagues from *Quito* in *Peru*, pressing forward its streams from West to East: Its Springs and its Mouths are under or near the *Aequator*. The breadth of its Channel from *Junta de los Rios*, which is 60 and odd Leagues from its Springs unto *Maranhon*, is of one or two Leagues, and below *Maranhon*, two, three, or four, enlarging still as it approacheth the Sea, where it makes an opening of 50 or 60 Leagues between the Capes de *Nort* and *Zapare*; this

this on the Coast of *Brazile*, the other on the Coast of *Guiana*: Its depth likewise from *Junta los Rios* unto *Maranhon* is at least 5 or 6 Fathom, in some places 8 or 10; from *Maranhon* unto *Rio Negro*, 10, 15 or 20, and from *Rio Negro* to the Sea 30, 40, 50, and sometimes much more.

One *Francis Orelbane* was the first that took any pains to know the course of this River. In 1540 he transported himself to *Junta de los Rios*, where he caused to be built a Vessel proper to descend this River to the Sea: In 1541 he imbarqued himself with some Souldiers, had divers encounters in the way, but about the end of August he found the Sea, after which he hasted to *Spain* to make this discovery known unto the King. In 1549 he returned from *Spain* to the *Amazon*, where after his spending a long time upon the great Sea, being sometimes beaten to and fro by the impetuosity of the winds which caused great storms, then retained as long by calms, which together with the loss of a great many of his men, at length he entered into its mouth; yet after all these labours and miseries, he was so unhappy, that not finding the true channel to remount the *Amazon*, he died with grief; having gained nothing for all his travel, labour and expence, but the honour that some give his name to the River, calling it *Orelbane*. After *Francis Orelbane*, the *Amazon* was let alone for a good continuance of time. In 1560 those of *Lima* in *Peru*, tried it another way; they caused some to embark on the River of *Xauxa*, otherwise of *Maranhon*, which begins in *Peru*, below *Guanuca*, and about 150 Leagues from *Lima*, passes within 30 or 40 of *Cusco*, and by a course of 5 or 600 Leagues descends into the *Amazon*, which hath scarce made 300 at this meeting, yet is found the larger; this voyage was likewise unhappy; for *Pedro de Orsua* Chief of this expedition was slain by his own men, and *Lopez de Aguyre* chief of the sedition, finished to descend to the Sea by the *Orinoque*, and landed at *La Trinity*, where he was arrested, and chastised for his felony. In 1566 those of *Cusco* tried again the discovery of the *Amazon* by the *Amarumaye*, which could not succeed, there being two competitors for this expedition; who made war, fought, and weakened each other in such manner, that there remained but a few to be knocked on the head by the *Chonchis*: *Maldonado* one of the Chiefs of this expedition, together with two Fryers escaped and brought the news; after this of *Maldonado* no more discovery of the *Amazon* was attempted till 60 or 70 years after. In 1635 *Jean de Palacios* reattempted this design, transporting himself, with some others to *Annete*, to see with what means he might serve himself to make this voyage; but in 1636 he was killed, and the greatest part of his men returned; but two Fryers and 5 or 6 Souldiers, put themselves into a Skiff, with a resolution to descend the River, and in the end arrived at *Para*, the chief Colonie of *Brazile* under the Crown of *Portugal*, where they told the news to *Pedro Texeira*, Captain Major of *Para*. Though *Brazile* was then in arms against the *Hollanders*, yet *Texeira* forbore not to equip 47 *Barques*; caused to be imbarqued in them 70 *Portugals*, with 1200 *Indians*, who knew how to manage *Armes*; and likewise 800 *Boyes* and *Wolmen* to serve them; with these he departed in October 1637. remounted the River, and was so happy, that he finished his voyage even to *Peru*, left a part of his men there, where the River *Chevelus* falls into the *Amazon*; the rest he left at *Junta de los Rios*, except himself, with some few persons which came to *Quito*; where he made his report in September, 1638. The news being brought to *Lima* to the Count of *Chinchon*, Vice-Roy of *Peru*, he gave order to furnish them with all things necessary for their return; and that the Father *Christopher de Acogne*, a Jesuite, and his companion should go with them to carry the news to *Spain*. They parted from *Peru* in February 1639 and arrived at *Pera* in December following, and soon after Father *Christopher de Acogne* carried the news to *Spain*, arriving there in 1640. and exposed his relation to publick view.

The course of
the Amazon
deavoured to
be found out by
Francis Orel-
bane, Pedro de
Orsua, and o-
thers, with the
adventures &
misfortunes, which befel
them.

Texeira happy
in the discov-
ery of the
course of the
Amazon.

These

These two last Voyages of *Texeira* mounting and descending the River, have given us a more ample and true knowledge of the *Amazon* than all those before him could do; and according to their report, all the Regions which are about the *Amazon* enjoy a temperate Air. The Eastern Winds which blow all day, the Nights equal to the Days, the annual Inundations like to those of the *Nile*, the great quantity of *Trees* and *Forrests*, which are upon or near the River, yield much refreshment, and keeps them from being troubled with thousands of ugly Insects, which they are pestered with at *Peru* and *Brazil*. They say, that the Leaves and Fruits of the *Trees*, the verdure of their *Herbs*, and the beauty of their *Flowers*, gives great delight to the Inhabitants all the year long. The Country (by reason of the Inundation of the River) is very fertile in *Grains*, hath rich *Pastures*, and their *Fruits*, *Plants* and *Roots* are in great plenty, and may compare with any Country in all *America*; their *Rivers* and *Lakes* are well stored with *Fish*, among others the *Sea-Calf* and *Tortoise* are very large and delicate. The Country is well clothed with Woods, some *Trees* being 5 or 6 Fathom about, and along the River may be built as great Ships as any that swim on the Ocean. Their *Ebony* and *Brazil* is grown to an inexhaustible quantity; they have great store of *Cocoa* and *Tobacco*, plenty of *Sugar-Canes*, which they might easily husband, and abundance of other Commodities, without having regard to *Gold*, *Silver*, and other *Metals* which are found there.

They have abundance of different Nations upon and about the *Amazon*; the most part of these Nations so well peopled, and their Villages so thick, that the last House of the one may easily hear the noise made in the first House of the other. Of these People, the *Homagues* are esteemed for their Manufactures of *Cotton-Cloth*; the *Corospares* for their *Earthen Vessels*; the *Survines* for their *Joyners-work*; the *Topinambes* for their *Power*. The *Boto* and *Javelin* being their general and common Arms.

Among the Rivers that fall into the *Amazon*, the *Napo*, the *Agarté*, the *Putomaye*, the *Jenupape*, and the *Coropatube*, and with some others, have their Sands mixt with *Gold*; below *Coropatube* there are divers Mines of *Gold* in the Mountains of *Taguare*, Mines of *Silver* in that of *Picory*, and of divers *Stones* in that of *Paragoche*, and of *Sulphur* in many others.

As for the *Amazonian Women*, and their Kingdom, from whence it is pretended this River took its name, many accounts have been made, and divers Relations given of it to *Quito*, *Cusco*, and other places; and possibly those of the Country would have frighted the *Castilians* and *Portugals* which have been on this River. But it is no otherwise, than that the Inhabitants of the Country being in Arms, there hath sometimes been some *Women* so courageous, as to be in their party; but there never was a whole Country or Kingdom of these *Women*. And in fine, they seek them so far within the Country, that they cannot be on the *Amazon*: so those may turn to a Fable, as well as those which the *Greeks* have formerly recounted to us of such Wonders.

The Country
very fertile.

Abundance of
different Na-
tions along the
Amazon.

Rivers that
fall into the
Amazon.

The *Amazon*-
nian Women.

PERU

PANAMA	Panama. Nombre de dios: Darien.
CARTHAGENA	Cartagena. Mocho.
St. MARTHA	Santa Maria: la Concepcion. St. Martha. Tenerife. Tamalameque. Los Reys.
RIO de la HACHA	Ocanna. Rio de la Hacha. Ranceria. Venezuela. Nof. signo. de Carvalleda. St. Jago de Leon. Nueve Xeres. Valenza la Nueve. Segovia la Nueve. Tucuyo. Truxillo. Comana.
VENEZULA	Corduba. Montehab. Macureguas. Caceres. Orinake. Tauparamunen. Morenogo. Macurewaraj. Manoa del dorado. Santa Fee de Antiochia. Calamanti. Arma. Anzerma. Carrago. Popayan. Almoguer. Tlmana. Truxillo. Guadaluja. St. John de Paito. Sando Fee de bogata. St. Michael. Tocayma. Tunia. Trinidad. St. John de los lanosi. Yelen. Meriquita. Quilo. Rio bamba. Porro Viejo. Guayquil. Cuenca. Lozin. Zamora. Yaen. St. Michael. Bafia. Archidona. Avila. Sevilla del Oro. Loyola. Yaladolid. St. Jago de las Montañas.
New ANDALUSIA	
PARIA	
CARIBES	
GUIANA	
POPAYAN	
GRANADA	

TERRA FIRMA, whose Governments or Provinces, with their chief places are those of

PERU-
VIANE
where there
shall be

PERU, with its Audiences of

QUITO with its Provinces of	de los QUIX-OS.
PAZAMO-ROS,	
LIMA, whose chief places are	Lima. Cuzco. Arequipa. Valverde. Arnedo. Leon de Guanuco. la Parilla. Truxillo. Microfoya. Cachapoya. de la Plata. Porosi. Oropeza. Santa Cruz de la Sierra.
De la PLATA, whose chief places are,	

The Country of the AMAZONS, or the people Inhabiting by the River AMAZONE, which are many, and of sundry sorts.

CHILLI, whose parts or Jurisdictions take their names from their chief Cities in each part, as those of

MAGELLANICK LAND—
TERRA DEL FUGO, or the ISLAND of MAGEL-
LAND,

Coplapo. Concepcion: Imperial. Villa Rica. Valdivia. Oforno. Cañio. St. Jago. Serena. de la Frontera. St. Phillip. de la Guadalupe.



P E R U.

The greatness
of Peru.

Its length and
breadth.

The parts of
Peru are three,
and all differ-
ent from one
another, as
well in fertili-
ty, as other-
wise.

Peru by the
Spaniards di-
vided into
three Audien-
ces, in which
are several
Provinces.

PERU is an Empire or Kingdom, so rich, and great, that all *America Meridionalis*, or at least the half of that *America*, sometimes takes the name of *Peruviana*. *Peru*, taken more precisely, extends it self, more or less, according to the diversity of Authors: It is for the most part between the *Equinoctial Line*, and the *Tropick of Capricorn*, where it hath more than 600 Leagues length; and if we add the Part of *Popayan*, which is on this side the Line, and which depends on the *Chamber of Quito*, in *Peru*; and that part of *Tucuman*, which is beyond the *Tropick of Capricorn*, and which depends on the *Chamber de la Plata*, in *Peru*; its length will not be much less than a 1000 Leagues. Its breadth is likewise very diverse, esteeming what the *Spaniards* more absolutely possess. Its breadth will not be above one hundred, or sometimes two or three hundred Leagues; if we add all the Estates that lie upon the *Amazon*, unto the Confines of *Brazile*, we may make account of 6 or 700 Leagues of breadth. According to some Authors, this Country is divided into three Parts, and all different from one another; which Parts are, the *Hill-Countries*, the *Andes*, and the *Plains*. The *Hill-Countries* are twenty Leagues broad, at the narrowest; the *Andes*, as much; and the *Plains*, Ten Leagues, and something more; and each part extends it self the whole length of the Country. The *Hill-Countries* are bare and naked; the *Andes* well clothed with Woods and Forests; and the *Plains*, well furnished with Rivers, together with the benefit of the Sea; yet, in many places, the earth is sandy and dry, which makes it unfit for *Grains*, or *Fruits*. In the *Hill-Countries*, their Summer beginneth in *April*, and endeth in *September*, during which time they have fair weather; and from *September* to *April*, which is their Winter, it raineth: This Part is much subject to Winds, which it receiveth from the Coast, which bringeth a difference in the weather; some Winds bringing *Snow*, others *Thunder*, others *Rain*, and others *Fair Weather*; and where there is little but little *Rain*, it is observed to be the more Fertile in *Corn* and *Fruits*. On the *Andes*, it is said to rain continually; whereas, in the *Plains*, seldom, or never; and their Summer beginneth in *October*, and endeth in *April*; so that when it is Summer here, it is Winter with those in the *Hill-Countries*; And its observed, that a man, in one daies journey, may see Summer and Winter, so that at his setting forth he may be in a manner frozen, and before night scorched with heat.

That part of *Peru*, best known, and on the *Mer del Sud*, hath been by the *Spaniards* divided into three *Audiences*, viz. *Quito*, *Lima*, and *De la Plata*: That of *Quito* is the most Northern; that of *De la Plata* the most Southern; and that of *Lima*, in the middle; and each of these *Audiences* hath divers Provinces. *Quito* holds part of *Popayan*, part of the true *Peru*, *Los Quixos*, or *La Canela*, *Pazamoros* or *Gualfongo*, and likewise *St. Juan de las Salinas*. That of *Lima*, holds the true *Peru*, where there were several Provinces, which the name of *Peru* hath swallowed up. And the *Audience De la Plata* holds the Provinces of *Tucuman*, and *De los Charcas*, and these Provinces comprehend a boundance of other lesser ones, the knowledge of which is little necessary.

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The *Audience of Quito* is about the *Equinoctial Line*, and is 2 or 300 Leagues long, and large. The Quarter of *Popayan*, subject to this *Chamber*, hath the Cities of *Popayan*, *Cali*, *Timana*, and others; which we have already treated of, with *Popayan*, in *Terra Firma*. The Quarter of *Peru*, subject to *Quito*, hath the Cities of, 1. *St. Francisco del Quito*, or simply *Quito*; once one of the principal Cities of the *Inca's* of *Peru*, being the Regal Seat of their Kings, where they had a magnificent *Palace*. Its Streets are strait, broad, and well ordered, and its Houses well built; is adorned with a fair *Cathedral Church*, two *Convents of Dominican and Franciscan Friars*, as also with the *Courts of Judicature*: once very large, but at present, it hath not above Five hundred Houses of natural *Spaniards*. Two or three thousand Houses inhabited by the *Natives*; and in its Territory near a hundred Villages, where the *Natives* also reside; since the *Spaniards* became Masters of *Peru*, they have made this a place of good strength, being well Fortified, and as well stored with *Ammunition*. 2. *Rio Bamba*, of no note, except for its ancient *Palace* of the Kings of *Peru*. 3. *Cuenca*, seated in a Country well stored with Mines of *Gold*, *Silver*, *Brass*, and Veins of *Sulphur*. 4. *Loxa*, seated in a sweet and pleasant Valley, between two Rivers, the Inhabitants are well furnished with *Horses* and *Armour*, which is the chiefest part of their Wealth. 5. *St. Michael de Piura*, of no great account, except it be for its being the first Colony which the *Spaniards* planted. 6. *Peru*, in *St. Jago de Guayaquil*, of some note; seated near the influx of the River *Guayaquil*, at the bottom of an Arm of the Sea. 7. *Castro de Vili*, another Colony of *Spaniards*. 8. *Porto Viejo*, seated not far from the Sea-shore, but of no account, by reason of the badness of its air; its Port-Town is *Mantu*, nigh to which is a rich Vein of *Emeralds*. 9. *Juan*. And 10. *Zamora de los Arcades*, both so called in reference to two Cities of those names in *Spain*; and these are the Cities, or Colonies, which the *Spaniards* possess in the *Audience of Quito*, which have been established, at divers times, and not long after the Conquest of *Peru*.

The air of the Country is sufficiently temperate, though under the Line, it is Fertile in *Grains* and *Fruits*, well stored with Cattle especially with *Sheep*; and also plentifully furnished both with *Fish* and *Fowl*; but the Fertility of the Country is most seen about, or near *Quito*, and *Porto Viejo*; near *Lona* and *Camora* are Mines of *Gold*, near *Cuenca*, Mines of *Silver*, *Quick-silver*, *Copper* and *Iron*: Near *Porto Viejo*, Mines of *Emeralds*, and about *Guayaquil* is found *Salsaparilla*.

The Province or Country, *DE LOS QUIXOS*, otherwise *de la Canella*, is Eastward of *Quito*: Its chief Cities are, 1. *Baesa*, built in 1559 by *Giles Ramirez de Avila*, Eastward of *Quito* about eighteen Leagues, now the Residence of the Governour. 2. *Archidona*, twenty Leagues, South-Eastwards of *Baesa*. 3. *Avila*, so called in reference to *Rimerez de Avila*; and 4. *Sevilla del Oro*, all Colonies of *Spaniards*: The Country is Mountainous, rude, and unfertile; yet produceth a *Cinnamon-Tree*, which pruned, the tree, bark, and leaves are *Cinnamon*; but the Fruit is by much the best, and most perfect.

PAZ AMOROS, South of *de la Canella*, hath three Cities, or Colonies of *Spaniards*, viz. 1. *St. Juan de las Salinas*, or *Valladolid*; 2. *Loyola*, or *Cambinama*; And 3. *St. Jago de las Montañas*: The Air of the Country is said to be healthful, the soil indifferent fruitful, and feeds many Cattle; and also abounds in Mines of *Gold*. *Los Quixos*, and *Pazamoros* depend as to their Spiritual Government on the Bishop of *Quito*.

The *Audience of LIMA*, is at present most famous of all, by reason of the Cities of *Lima* and *Cusco*; this having been formerly the *Metropolis* of the Empire of the *Inca's*, and the other being the present Residence of the *Viceroy of Peru*; and this *Audience* comprehends the true *Peru*; the chief depending Cities, besides *Lima* and *Cusco*, are, 1. *Arnedo*, seated in a Valley among *Vineyards*. 2. *La Santa*, or *la Payilla*, seated in a Valley, nigh to which are rich Mines of *Silver*. 3. *Truxillo*, situate on the Bank of a small, but pleasant River, about two Leagues from the Sea, where it hath a large, but

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The Audience
of Quito de-
scribed.
Its chief Ci-
ties.

The fertility
of the Country
Mines of Gold,
Silver, and
other Metals.

The Province
de los Quixos.

The Province
of Pazamoros.

The Audience
of Lima.

unsafe Haven, and in a pleasant Valley; the Town indifferently well built and large, and beautified with four *Convents* of several *Orders*. 4. *Miraflores*, about 5 Leagues from the Sea, in the valley of *Zana*, of some note for the abundance of *Sugar Cane*s that grow there. 5. *Cachapoyas*, or *St. Juan de la Frontiera*, of good account in former times for furnishing the Kings of *Peru* with handfom women. 6. *Leon du Guanuco*, rich and pleasantly seated, and beautified with some *Religious Houses*, a Colledge of *Jesuits*, and in former time with a stately *Palace* of the Kings. 7. *Arequipa* situated at the foot of a flaming Mountain, in the valley of *Quilca*, made happy by a flourishing soil, and temperate air. 8. *Valverde* seated in a valley of the same name, which yields plenty of *Vines*, from which they make good *Wine*; the Town is indifferent large, being Inhabited by about 500 *Spaniards* besides *Natives*; and beautified with a fair *Church*, an *Hospital*, and three *Fryeries*. The City of *Lima* is two Leagues long, and one broad, seated in a pleasant valley, being begirt with sweet *Fields* and delightful *Gardens*, below which is its Port *Collao*. The Houses in this City are well built, its streets large, and so ordered that most of the chief take their rise from the *Market-place*; It is said to consist of 10000 ordinary Families, besides *Passengers*, and those that come hither for trade, which are many, by reason the riches of *Peru* that yearly pass through this City to go to *Spain*, which hath not a little encreased its wealth. The City encloses several fair *Edifices* and *Churches*, among which these following may not be forgotten: *viz.* The *Palaces* of the *Vice-Roy* and *Archbishop*, then the *Cathedral Church* built after the Model of that of *Sevil* in *Spain*, and endowed with an Annual Revenue of 30000 Ducats, also the Courts of *Judicature*, the *Colledges* and *Monasteries*; also its four *Hospitals*, to wit, one for the *Clergy*, another for the *Spaniards*, a third for the *Indians*, and the fourth for the *Widows*: The air about this City is healthful, temperate, alwaies serene, and the soil the most fertile of all *Peru*.

Among the other Cities *Cusco* is the chief among those of the Provinces of the *Hill-Countries*, and the *Andes*, being by much the most famous; having been the Residence of the *Inca's*, or *Peruvian Kings*, who for the more beautifying this City ordered all their Nobility to build each of them a *Palace* for their Residence; at present it is of the greatest account in all this Country, as well for its beauty and greatness, as for its populousness, being said to be the habitation of about 3000 *Spaniards*, and 10000 *Natives*; besides Women and Children. Besides these *Palaces*, It is adorned with a *Cathedral*, and 8 *Parish Churches*, four *Convents of Religious Orders*, a Colledge of *Jesuits*, a stately *Temple* dedicated to the *Sun*, also several *Baths* about the City, and abundance of very fair Houses, in the *fields*. Its situation is betwixt two pleasant and useful Rivers; and begirt with Mountains.

The Country for the most part is fruitful, they have good *pastures*, which are well stocked with *Cattle*, they gather abundance of *Coca*, have excellent *Venison*, and the Country generally well furnished with *Rivers*, in which they take good *Fish*. It yields many Mines of *Gold* and *Silver* about *Cusco*, and particularly of *Gold* at *St. Juan del oro*, at *Oropesa* *Vermillion*; and *Quicksilver*, between *Arnedo*, and *Port de Guajara*, and likewise at *Barranca* are rich *salt pits*.

The Inhabitants of *Guanuco*, and of *Chachapoyas*, are the most civilized of *Peru*. There are yet every where a great number of these *Indians*, there being esteemed under the jurisdiction of *Truxillo*, 50000 Tributaries, 30000 in that of *Guanuco*, as many in *Guananga*, 50000 in that of *Arequipa*, and 100000 in the jurisdiction of *Cusco*, &c. There are likewise others who yield no obedience to the *Spaniards*, among which are the *Manatiens* not far from *Cusco*, who maintain themselves in their Mountains; who often butcher and eat those *Spaniards* they can entrap.

The Province *DE LA PLATA*, or *de los Chaecas*, is South of *Peru*, and under the *Tropic* of *Capricorn*. It is divided into two or three other lesser parts, to wit, *de los Chaecas*, *de la Sierra*, and of *Tucuman*. This last is quite beyond the *Tropic*, and we will describe it with *Paraguay*, or *Rio de la*

The City *Lima* pleasantly seated.
Its Houses, Streets, &c.

Hath many stately Edifices.

The City of *Cusco*, with its several magnificent Palaces, and other Buildings.

Its Fertility.

Hath Mines of Gold and Silver.

The Province *de la Plata*, with its Cities described.

la Plata, with which it shall best agree. The two others are for the most part on this side that *Tropic*. The chief City is *de la Plata*, that is of *Silver*; and this City gives sometimes its name to the Province; is the Residence of an *Archbishop*; dignified with the seat of the *Governour*, the Courts of *Judicature*, and beautified with a fair *Cathedral*, besides several *Religious Houses*. The City is seated in a pleasant and fruitful soil. Its Houses well built; and so large, that within its walls are the habitations of 800 natural *Spaniards*, beside 60000 *Natives* Tributaries, under its Jurisdiction. Its Mines by reason of the commodities of the waters, were abandoned so soon as those of *Potosi* were discovered, which, since this discovery, from a small Village is now become a very considerable and large Town, of two Leagues Circuit, being Inhabited by about 40 or 50000 *Spaniards*, besides about 30000 *Natives*, and others, that work in the Mines. It is seated below the Mountain, which bears the same name; from whence they have their *Silver*. A City esteemed free because of its large and ample privileges; the Officers for the *Treasure* of the Province residing here, being also much frequented by *Merchants*, which come hither to trade for their *Silver*, bringing them several Commodities in exchange that they have need of, so that I may say, it is plentifully furnished with all *Commodities*, as well for delight, as necessity. The other Cities are *Neuestra Sennora, de la Paz*, or *Villanueva*, *Oropesa* and *Chicuito* a City of *Indians*; Then *Santa Cruz de la Sierra*; and in *Tucuman* *St. Jago del Estera*, *Neuestra Sennora de Talavera*, and *St. Michael of Tucuman*.

That which is most observable in this Province are the *Silver Mines*, *de la Plata*, *de Porco*, and above all those of *Potosi*, being the most famous in the world, though yielding nothing but *Silver*. It is observed of this Mine, that it hath four principal veins, the first which is called the rich; was Registered the 21 of *April* 1545. and the others in little time after. These *Enregistrers* are made to take notice of the time granted to those which discover the Mines, to whom they belong, defraying the charge, and paying to the King the right of a fifth part. It is said that the rich Mine had its Metal out of the Earth, in fashion of a *Rock*, or like a *Chrest* of 300 Foot long, 12 or 15 broad, and 10 or 12 deep. And that which is likewise observable, is that all these *Veins* are towards the *Sun* rising, and not one towards its setting: they have now exhausted all that was the best and easiest to take away, and the *Miners* are descended into the Earth, some to 500, others to 10, or 1200 Degrees of depth. The Rich vein yielded the moiety of good *Silver*; but now scarce will Quintal of Ore yield two Ounces of pure *Silver*; yet some will say that the *Catholic King* receives for his fifth part, near two millions of Crowns yearly. Account is made of 20000 men, working in these Mines, and of 50000 *Indians*, which go and come to the City of *Potosi*, to trade.

SANCTA CRUX DE LA SIERRA, or the *Holy Cross* of the chief Mountain of its little Province, is East of *Potosi*, but inclosed with many barbarous Nations on the West and South; among others, the *Chiriguagues*, which are a sort of People not to be reduced to order, though between *La Sierra* and *Tucuman*. The Country is hot, but sometimes oppressed with cold and sharp winds; the Land hath *Grains*, *Wine*, and feeds much *Venison*.

The *Inca Garcilasso de la Vega* hath given us a very fine History of *Peru*, of its *Inca's* or *Kings*, with their Riches, great Revenues, Policies, and Forces: as to their Wealth, it was shewed by the vast Treasures which the *Spaniards* became Masters of; all their moveables, besides Rooms full of several sorts of Images; being of *Gold* and *Silver*, together with several Rooms filled with *Treasure*. Their Policy was shewed in the management of their Affairs, and enlargement of their Territories, treating their Subjects kindly and lovingly; and allowing them share in the spoils of other Countries, merely to endear them, and gain their affections; and by these, and the like means, they were much revered, and faithfully served by their Subjects. And lastly, as to their Forces, we may conclude them to have been great, if we look back upon their great and many victories they have gained, as also of the *Civil Wars* maintained between the first *Spanish Chiefs* that Conquered this great Empire, though

This Province rich in Mines of Silver.

The riches of the *Inca's* of *Peru*. Their Policy. Their Forces.

Inhabitants.

though with no small pains, expences, and loss of men. The People are said to be of a strong and healthy constitution, courageous and warlike, great Dissemblers, ignorant of Letters, much given to *Drink*; were formerly so barbarous, that they adored only *Beasts*, or those inanimate things, which they might make use of, or which they feared might hurt them; sacrificing not only *Fruits* and *Beasts*, but likewise *Men* and *Women* taken in *War*, and sometimes their own Children.

Two rare Plants worthy of note.

Among the rarities of this Country, here is a Plant, which, if put into the hands of a Sick person, will immediately discover whether he shall die or recover; for, if he, at the putting it to his hand, look of a cheerful countenance, then it is a sign of his recovery; but if sad, and troubled, a sure sign of death. They have another Plant, of which the North-part, regarding the Mountains, beareth its *Fruits* only in Summer, and the Southern-parts, towards the Sea, in the Winter season only.

C H I L I.

Chili bounded. Its length and breadth.

CHILI is between *Peru*, which is North of it, and the *Patagons* which are on its South towards the Streight of *Magellan*, and between *Paraguay*, and the *Magellanick-Land*, which are on the East of it, and the *Mer del Sud*, which washes it on the West; its length, from North to South, extends from the 26 Degree of *Latitude*, unto the 46, and reaches 500 Leagues. Its breadth, from West to East, is between the 296, and 302, and sometimes 305, 306, 307 Degrees of *Latitude*; and sometimes likewise stretches 500 Leagues. But the *Andes*, bounding it almost all along the East, these Mountains in some places advance so near the Sea, that they leave it but a small breadth.

Chili divided into three quarters, which are subdivided into 13 Jurisdictions.

Chili is divided into three Quarters, and these Quarters into thirteen Jurisdictions; one of the three Quarters retains the name of *Chili*, and contains the Jurisdictions of *Serena*, *Quillata*, and *St. Jago de Chili*, extending it self from the River of *Copiapó*, unto that of *Maule*; where are on the Coast the Ports of *Copiapó*, of *Guasco*, of *Coquimbo*, where Sir *Francis Drake* was repulsed, and of *Valparaiso*, where he surpris'd a Vessel laden with 25000 *Pezos* of Gold of *Valdivia*, and a great quantity of *Wines*. The second Quarter advances from the River of *Maule* unto that of *Gállegos*, and is called the *Imperial* from one of its principal Cities: The Jurisdictions of this part are those of *Concepcion*, of *Ongol* or *de los Infantes*, of the *Imperial*, of *Villariça*, of *Valdivia*, of *Osnoro*, and of *Chilva*. The *Concepcion*, *Valdivia*, and *Chilva*, have their Ports of the same name; that of *Cauten* serves for the *Imperial*: These two Quarters of *Chili* and the *Imperial*, are between the *Mer del Sud* and the *Andes*. Beyond these Mountains in the last Quarter *Ghucuito* or *Cayo*, where are the Jurisdictions of *Mendoza*, and *St. Juan de la Frontera*. All these Jurisdictions take their Names from the principal Cities; besides which they have some others: But a word or two of some of the chief Cities in *Chili*, and first of *Copiapó*, seated in a Fertile Valley of the same name, and neighboured by a good, but small Haven.

Its chief Cities described.

1. *Concepcion*, seated in a capacious Bay, by which, and the Mountains which encompass it, which are well fortified, it is a place of good strength, so that it is made the Residence of the Governour, where he hath a strong Garrison of *Spaniards*. 2. *L'Imperial*, situate on the Banks of the River *Cauten*, a place of great strength and power, esteemed one of the strongest in this Country, and is the See of a *Bishop*. 3. *Villa Rica*, 25 Leagues from the *Mer del Sud*, another Colony of *Spaniards*. 4. *Valdivia*, neighboured by a capacious and safe Haven, as also by rich Mines of Gold; another Colony of *Spaniards*. 5. *Osnoro* plentifully stored with Mines of Gold, but seated in a barren soil. 6. *Castro*, built on the Bay of *Ancud*, in a fruitful Island, about 50 Leagues in length, and 9 or 10 in breadth. 7. *St. Jago*, seated on the Banks of the River *Topacahna*, at the Mouth whereof is a noted Haven, called, *Valparaiso*. And

And

and 9. *Serena*, situate on the Banks of *Rio de Coquimbo*, not far from its influx into the Sea; a Town, though but small, yet of good strength, especially, since it is become a Colony of *Spaniards*; rich also in Mines of Gold.

Chili in their Language, signifies Cold, which in regard of the Mountains of *Sierra Nevada de los Andes*, are said to be extremely cold; and where reigns a certain Wind, so sharp, and piercing, that it insensibly extinguishes the natural heat, so that people often die in a moment; and then freezes, and hardens their bodies in such manner, that they corrupt not.

The *Valleys* and the *Plains* nearest the Sea, are well inhabited, and have the Air healthful, serene, and temperate; the soil excellent, and Fertile; though not without some difference, according as it is nearer or further from the *Equator*. The Quarter of *Chili* ought to be hotter, and that of the *Imperial* as hot as *Spain*; but the vicinity of the Mountains on one side, and the other, renders it a little colder than otherwise might be expected, as to the Climate; but yet hot enough to be one of the best Parts of *America*. The Valley of *Copiapó* yields sometimes Three hundred for one; those of *Guasco*, and *Coquimbo* are held no waies inferior to it; that of *Chili* is so excellent, that it communicates its name to the Country. Above these *Valleys* are Mines of *Silver*, *Quick-silver*, *Copper*, *Lead*, and great plenty of *Gold*; both in the Ingots, and Sand.

Valdivia, who was here after *Almagre*, and who at the beginning succeeded better than his Predecessor had done, extracted a great quantity of *Gold* out of this Country; and caused to be wrought several Mines of *Gold*, so rich, that each *Indian* rendred him thirty or forty *Ducats* daily; and when he had employed but twelve or fifteen *Indians* in this work, they would have yielded three or four hundred *Ducats* a day; and in a month, about Ten thousand; and in a year, about a hundred, or 8 hundred and twenty thousand *Ducats*. This agrees with what the *Inca Garcilasso de la Vega* reports in his History, saying that the Count *Valdivia* had for his Portion a part of *Chili*, and that his Subjects rendred him the yearly tribute of a hundred thousand *Pezos* of *Gold*. But the thirst after this Metal being insatiable, and *Valdivia*, the more he received, the more still he coveted, forced to work in these Mines those *Indians*, who, not accustomed to so hard a labour, nor to serve so cruel a Master, resolved to rid themselves of him, and to cast off their heavy yoke: In pursuance of which, those of *Arauco*, and thereabouts, began the revolt; and after divers encounters, slew and took a hundred and fifty of his *Horsemen*.

These *Araucques*, with their Neighbours, assembled themselves to a Body of Twelve or thirteen thousand men; who after having been divers times beaten by *Valdivia*, and in all likelihood of being quite subdued; at length, an old *Indian*, who in all possibility, had before observed the order which the *Spaniards* held in their *Battels*, advised them to divide their men into many Squadrons; and shewed them how each Squadron, one after another, must assault the *Spaniards*; and that the first Squadron being broken, must rally in the tail of the last; which succeeded so well, that in the end, they so wearied the *Spaniards*, and their *Horses*; that when they began to think of a retreat, they were prevented, and utterly defeated. Some say, that *Valdivia* being fallen into their hands, was fastened to a Tree, and his *Almoner* to another, so near together, that they might discourse together, and condole one anothers misfortunes. And that the *Araucques*, from time to time, (though contrary to their custom, to eat human flesh) did cut off gobbets of flesh from their *Leggs*, *Thighs*, and *Arms*, which they caused to be roasted, boyled, or broiled, according to their several Appetites, which they did eat in the sight of these poor tormented Creatures, whilst they were finishing their daies in such a lingering death: Others say, that they took off the top of his skull, and poured melted *Gold* into his *Brains*, *Mouth*, and *Ears*, making afterwards a *Goblet* of his *Head*, and *Trumpets* of his *Bones*, &c.

After

The City of Valdivia taken and destroyed by the Natives, with others.

After the death of *Valdivia*, the *Spaniards* had great disadvantages in *Chili*, till that *Gracias de Mendoza*, son to the *Vice Roy of Peru*, had reduced part of these people to obedience, which continued for no long season; for in 1599, these people surprized the City of *Valdivia*, seized on the *gates* and chief *places*, invested every house, to the end nothing might escape their hands, set fire through all, killed and took prisoners 4 or 500 men, women and children; took the *Fort*, wherein were three hundred thousand *Pezos* of Gold, besides which they carried away with them all the *Arms*, *Ammunition*, and *Artillery*.

After the taking of *Valdivia*, the *Imperial* was besieged, which they stoutly defended and maintained for the space of Twelve Months, and would have done longer, were it not for the Famine and sickness that so extremely reigned amongst them, that reduced their Forces, together with the Inhabitants of the City, to about twenty men, who no longer able to defend themselves, submitted to the mercy of the *Araucques*; So that in the end, of 13 principal Cities that were in *Chili*, 6 or 7 were ruined; viz. *Valdivia*, *Imperial*, *Ongol*, *Chillian*, *St. Cruz*, *la Concepcion*, and *Villarica*: *Osorno*, in time received relief: The men found in the taken Cities were knocked on the head; they permitted the ransom of women, one of whom they gave for a pair of *Spurs*, a pair of *stirrups*, or a *Horses bridle*; for a *Sword* they would give half a dozen; but this commerce was soon Prohibited by the *Vice-Roy of Peru*; that *Arms* serviceable for War might not be put into the hands of these *Barbarians*.

Of those which they had got by means of this commerce, or which they gained at the taking of so many Cities, and in divers defeats of the *Spaniards*, they after made use; and became so dextrous, that they mounted on horseback, managed the *Lance*, *Musket*, *Halberd*, &c. and continued the War from 1599 to 1641. when the *Marquess Vadez* made peace with them. During this War there hapned a thing worthy of observation; to wit, In 1614, a Ship of *Biscay* bringing relief to the *Spaniards* that were in the Fort of *Araucque*, it unfortunately fell out that it suffered a Shipwrack on the Coast, so that the men fell all into the hands of the *Araucques*, who immediately slew them all, save only the *Trumpeter*, who being about to pass the same Fate with his Fellows, thought he would once more sound before he died, which saved his life.

The reason of the last revolt of the *Araucques* was, that after having served the *Spaniards* for near 50 years, and being for the most part become Christians, the *Spaniards* had yet taken some of their *wives* and *children*, and sold them away into perpetual and cruel servitude, which made them not only resolve to cast off the *Spanish yoke*, but likewise to renounce *Christianity*.

Under the name of *Araucques* are comprehended the Inhabitants of the *Mountains*, and *Valleys* of *Arauco*, *Tucapel*, and *Puren*; which are between the *Concepcion*, the *Imperial* and *Ongol*. Peace being made with these people, there rested in *Chili* none but the *Pulches* as enemies to the *Spaniards*; but these *Pulches* being beyond the *Andes*, they have little to do with them; and the Country is restored to a good estate, and the Cities better rebuilt.

LA CONCEPTION is at present walled with walls of stone, hath a *Cittadel*; and because the Governour of the Province resides here, though the soil be ingrateful, the Inhabitants have so tilled, manured, and so embellished it with Gardens, that it is become one of the pleasantest abodes of *Chili*. *Valdivia* is situated on an elevated ground, which with the addition of Art, is held one of the strongest in *Chili*.

The Jurisdiction of *St. Jago* hath under it more than 80000 *Indians*, which are divided into 26 *Partimientos*, or parts; that of the *Imperial* hath as many; *Osorno* 200000; *Castro del Chilwe* 12 or 15000 only, the other *Jurisdiccions* more or less.

The Natives of *Chili* are for the most part 6 Foot high, well proportioned, strong, active, warlike, and cruel when they have the advantage of their enemies; of a white complexion, their Garments for the most part are skins of beasts, their common *Arms* are *Bows* and *Arrows*.

The

A sad disaster befel a Ship of Biscay.

The reason of their last revolt.

The City La Concepcion, and Valdivia described.

The Inhabitants of Chili.

The Country is subject to *Earth-quakes*, the soil in the midland is for the most part Mountainous, and unfruitful; towards the Sea-side, level, fertile, and well watered with *Rivers*, which makes it yield plenty of *Wheat*, *Maize*, and other *Grains*; which, as also their *Vines*, were transported from *Spain* hither, which now are so abundantly increased that they often furnish *Peru*. Nor doth any Country in all *America* afford more *Cattle* than this doth, their *Sheep* like those of *Peru*, are very large; they have here long *Peper*, abundance of *Honey*, good *Fruits* and *Plants*, but their chiefest riches is drawn from the *Gold* and *Silver*.

In the Mountains of the *Andes*, though very cold, are 12 or 15 *Vulcans*, which perpetually vomit fire: These *Vulcans* take their name from the Vallies where they have their rise, or from Cities or Towns there adjacent.

The Fertility of the Country.

Its Commodities.

Ppp

BRA

SA VINCENT	St. Vincent
RIO JANEIRO	St. Paul
SPIRITU SANCTO	St. Spirit
PORTO SEGURO	St. George
LOS ISLEOS	St. John
BAYA de los SANTOS	St. Salvador
SEREGIPPE	St. Raphael
FERNAMBUCO	St. Michael
TAMARACA	Calvo
PARAYBA	St. Anthony
RIO GRANDA	St. Katherine
SIARA	St. Jago
MARANHAN	St. Lewis
PARA	St. Francis
PARAGUAY	St. Peter
CHACO	St. John
De la PLATA	St. Peter
TUCOMAN	St. John
URVAIG	St. John
PARANA	St. John
GUAYR	St. John

BRAZILE regarding the Sea, with its Governments (as they are Inhabited by the Portugals) of

BRAZILIANE where there shall be

BRAZILE within Land, which is possessed with abundance of several forts of people, (most of which are unknown unto us) among which are the

PARAGUAY Or, RIO de la PLATA, whole chief Provinces and Places, are those of

BRAZILE.

BRAZILE is most commonly taken for the most Eastern part of *America Meridionalis*. In 1501 *Alvarez Cabral* a *Portugal* sailing along the Coast of *Africa*, in his passage to the *East Indies*, by a great Tempest (the wind blowing Easterly) he was driven into these parts; where he erected and left a Column whereon were affixed the Arms of *Portugal*, to remain to future ages, signifying that he took Possession of it for the Crown of *Portugal*. A little after, *Americus Vesputius* was expressly sent to make a more particular discovery of it, which so well succeeded that in a short time some Colonies of *Portugals* were here established, and the name of *America* was given it in honour to *Americus Vesputius*, which name was soon after communicated to all this new Continent; but this quarter particularly took the name of *Brazile*, by reason of the great abundance of that wood here found more than in other places.

BRAZILE, taken in its greatest extent, is one half of *America Meridionalis*, which some call *Brasiliana*, but which they divide into *Brazile*, and *Paraguay*: this *Brazile* separated from *Paraguay* begins at the River of *Amazonas*, and extends it self to the Provinces of *Paraguay*: and though that be but from the first deg. of Lat. unto the 21; yet the Coast making a great *Demi-circle*, hath no less than 1200 Leagues. The *Mer del North* washes it on the North, South, East, and East; *Paraguay* and *Peyu* bounds the rest towards the South and West.

The high Country is wholly unknown; and likewise part of the Coast. It hath every where abundance of *Barbarous people*, who make war with, and eat one another; the divers relations hitherto given us, make mention of more than 100 of these peoples, yet these are few in regard of those yet unknown. The most famous, and best known, are the *Mingajás*, *Topinambous*, *Ovetacas*, *Paraiabas*, *Petiguaries*, *Tapouyes*, *Carigés*, *Morpions*, *Tobajars*, &c.

The *Portugals* have only seized on what they found most commodious on the Coast, and have from time to time placed divers Governments, which they call *Capitanies*. The most antient is that of *Tamaraca*, then of *Fernambuco*; now the most famous of all is that of the *Bay of all Saints*: they count Fourteen in all, which following the Coast, from the River of *Amazonas*, towards *Paraguay*, are, *Para*, *Maranhão*, *Siara*, *Rio Grande*, *Parayba*, *Tamaraca*, *Fernambuco*, *Seregippe*, *Baya de Todos los Santos*, *los Isleos*, *Porto Seguro*, *Spiritu Santo*, *Rio Janeiro*, and *St. Vincent*.

Each *Capitany* hath depending on it, one or two more Colonies of *Portugals*. In the *Capitany* of *SAINT VINCENT*, the principal is *Santos*; seated at the bottom of an Arm of the Sea, distant from the Main, about three Leagues; accommodated with a very good Port, capable to receive Vessels of 400 Tuns. This Town is Inhabited with about two hundred Families of *Portugals*, who have beautified it with a fair Church, and two Convents of *Friars*; and since the assault that *Sir Thomas Cavendish* made upon it in 1591, they have environed it with a wall, and well Fortified it with strong *Batteries*. The next is *Saint Vincent*, which hath not above one hundred houses of *Portugals*, but its Port little commodious. The third and fourth Cities are *Itanabin*, and *Saint Paul*, beyond the Mountains, and Forest *Pernambuco*, which are very difficult to cross, the way being cut through the trees: the City is seated on the Top of a little hill; and neighbored by some Mines

of Gold, found in the Mountains; a Town of about one hundred houses, and two hundred Families, beautified with a Church, two Convents, and a Colledge of Jesuits. This Capitany wants Salt, Wine, and Oyl, but in recompence they have all sorts of Fruits, and many Mines of Silver about St. Paul.

The Capitany of RIO JANIÉRO, takes its name from its River; so called, because it was entered into in the month of January. The Portugals have built the City St. Sebastian, at the mouth of the Gulph, which the River makes falling into the Sea; and Fortified it with strong Bulwarks. And more to the West, they have likewise built the City of Angra de los Reyes, and made it a strong Colony. This Capitany hath much Brazile-wood, Cottons, and all Provissions, but no Sugar. These two Capitanyes, Rio Janiero and St. Vincent, are on this side and beyond, or rather under the Tropick of Capricorn.

The Capitany DEL SPIRITU SANCTO, hath one of the best soils of all Brazile, well stored with Cotton-wool, but deficient in Sugars. Its River is called Parayba from a name common to three Rivers in Brazile; one is beyond St. Vincent, the second this, and the last waters the Capitany of Parayba; that which waters Spiritu Santo, is pleasant, but rapid. The City hath but two hundred and odd Families of Portugals. Its principal buildings are, a Church dedicated to St. Francis, a Colledge of Jesuits, and a Monastery of Benedictines.

PORTO SEGURO belongs to the Duke of Aveiro, and hath three Colonies, viz. 1. St. Amaro, or St. Omers, once of great account for making Sugars, where they had five Sugar Engines, for the ordering and making it, but deserted by the Portugals, for fear of the incursions of the Savages. 2. Santa Cruz, a Town not very large, neither with a commodious Harbour. 3. Porto Seguro containing not above two hundred houses, but held of some Antiquity. It is built on the top of a white cliff, which commands the Haven. The soil of this Capitany is so fertile in Grains and Fruits, that it furnisheth its Neighbours; It hath likewise Sugar.

LOS ISLEOS, belongs to Don Luco Giraldo, a Portugal; Its chief Town is seated on a small River, but neighboured by a great Lake of twelve Leagues circuit, from which this River takes its rise, and contains not above 150, or 200 Families of Portugals. It hath a long time suffered persecution, and the Colony almost lost by the Guaymures, a race of the most savage and barbarous people of Brazile, which being driven out of their own Country into this Prefecture, which they had utterly ruined, had not (as a Jesuite tells us) some of the Relicks of St. George been brought hither; which seeing, the Planters re-took courage, and bravely repulsed these Barbarians. The River which waters this City turns eight or ten Mills, or Sugar-Engines.

The Capitany del BAYADE LOS SANTOS, took its name from the Bay or Gulph, wherein is seated St. Salvador its principal City: This Bay having its mouth to the Sea, eight or ten Leagues wide, and its depth twelve, fifteen, or twenty fathom every where, encloses many Isles, of which the most outward to the Sea is Tapirico: This Bay makes likewise divers openings, fifteen or twenty Leagues within Land, from whence it receives the Rivers of Pitange, Ceresippe, Cachera, and others, each with their little Gulph: This Bay is memorable for the rash attempt of Peter Heyns a Dutchman, Admiral of a Fleet of the United Provinces for the West India Company, who in 1627 entered this Bay, where there were 26 sail of Spanish Ships, four of which were men of War, all lying under the Protection of the Castles and Forts; who notwithstanding the shots that he received from the Forts, Castles, and Ships, fell amongst them with such boldness, that he sunk their Vice-Admiral, and took all, or most of the rest, with a condition only of their lives. The City of St. Salvador, is in the most Northern part of the Gulph, seated on a little Hill, and towards the Sea; it regards its Ports made in a Demi-circle, whose two points, or extremities have each their Castle; St. Antonio towards the Sea; and Tape-sipe towards the Bay. This City all environed with a wall, is great and populous, and dignified with the Residence of the Vice-Roy of Brazile, for the

The Capitany of Rio Janiero with its chief places described, and its Commodities.

The Capitany del Spiritu Santo, with its Cities.

Porto Seguro, and its Cities.

Its fertility.

Los Isles with its chief places.

Bays delos Santos described.

A memorable Exploit of Peter Heyns a Dutchman.

The City of St. Salvador is fair, and beautified with many flatly Edifices.

Crown of Portugal, as also with a Bishops See, together with divers Officers. It is beautified with many Churches and Religious Houses, but above all, the Colledge of the Jesuits is magnificent. This Capitany is best peopled, and the richest of all Brazile: It hath 40 or 50 Sugar Mills, the most of which are about this Bay; every where there is quantity of Cotton, and on the coast is found Ambergrace.

The Capitany SEREGIPPE DEL RET hath only a little City, and Olivenera is that alone which gives it a degree amongst the Captains of Brazile; and here is esteemed to be some Mines of Silver.

The Capitany of FERNAMBUCK is one of the best of all Brazile, possessed by the Albuquerque. The Portugals have here established Thirteen Colonies, among which Olinda is the chief, being a fair and pleasant City, seated near the Sea-shore, but with no commodious Haven, only its entrance is defended by a Castle which is well Fortified; Account hath been made of two thousand Families of Portugals, besides the Clergy and the slaves which were in great number, which they employed in their Sugar-mines; and among the Portugals two hundred Families, which possessed each twenty five, thirty, forty, or fifty thousand Crusados, and more; the chiefest Ornament of this City is the Colledge of the Jesuits, built very rich and magnificent, and endowed with many Houses in the City, many Sugar-Engines, and much Cattle in the field; also a Collegiate Church, with six or seven others, besides Chapels, several Monasteries, and Hospitals, &c. From the City a Tongue of Earth advances to the Sea, at the end of which is Recife, a well-peopled Town, where the Ships load and unload their Merchandises.

This place is become Famous in our time, having been for many years disputed between the Portugals, and the Hollanders; but these have in the end been driven out by the other.

Besides the Colonies, there are abundance of Aldees for the Indians; it is observed that every year there is laden from Fernambuck, 80, 90, and sometimes a hundred Ships, the most part with Sugars, and some with Brazile-wood, and that only in the space of four years, which were 1620, 21, 22, and 23; there was transported from Angola in Ethiopia, unto this Capitany 15 or 16000 slaves to work in their Sugars, and Brazile.

The Soil is fat and fertile, the Sugar Canes coming of themselves both on the Hills and in the Valleys, and the Brazile-wood, being brought in a prodigious quantity from the Forrest Gran Mato of Brazile, 20 Leagues from Olinda. All these conveniencies, with the goodness of its pastures, makes them call this Capitany the Paradise of Brazile.

But in 1630, 31, 32, the Dutch West-India Company took, and ruined Olinda, and after it St. Augustine, and almost all the Fortresses, which the Portugals held in this Capitany: and were not driven out till within 9 or 10 years, but from time to time molested.

TAMARACA is the most antient Capitany, but the smallest of all Brazile; that of Fernambuck enclosing it on one side, and Parayba on the other. Its Fertility is admirable; the Port dos Francezes is a place of no great note, but for its commodious haven, which is well defended by an impregnable Castle, which is seated on the top of an hill.

The CARAIBA of Parayba, had likewise beginning from the French in 1584, which soon after was seized by the Portugals, and its principal City Parayba was called by them, Philippine, or Nuestra Señora da Nieves; and by the Hollanders when they were Masters of it, Frederickstad: It is two or three Leagues from the Sea; there where the River Parayba falls, having two Castles on the two parts, which end it, and defend its entrances, that on the right hand is Cape Delo, where is the Fort St. Katherine, the other Cape del Nort, where is the Fort of St. Anthony. This City is walled, and is seated on the banks of the said River; at the bottom of an Arm of the Sea, not above three Leagues from the Ocean. This Capitany on the North touches Rio Grande, on the South Fernambuck, enclosing that of Tamaraca, on the West: the River Parayba, dividing it into two equal parts; the Inhabitants adding them.

Seregippe del Ret, and its City.

The Capitany of Fernambuck, with its Colonies, and Cities described.

Its Trade and Commodities.

The Fertility of its soil.

Olinda and St. Augustine ruined by the Dutch.

The Capitany of Tamaraca, with its chief places described.

The Capitany of Parayba, with its chief City.

The bounds of this Capitany.

Its Inhabitants
addicted to
Tillage, and
making of
Sugar.

The nature
and fertility of
the land.

Their Cattle
and Fowls.
The habitations
of the Natives.

The Capitany
of Rio Grande
described.

The Capitany
of Siara, with
its Commodities.

The Capitany
of Maranhão,
with its chief
places.

The fertility
of the Country,
with its
Commodities.

Its Inhabitants,
and Apparel.

themselves to till the fields, where they possess their *Heritages, Farm-houses, and Ingenno's*, which are magnificently built. These *Ingenno's* are the *Mills* which serve to bruise the *Sugar Canes*; they are built along the River, where are the *Fields and Clofes*; in which lie the *Canes* and some *Coppes* from whence they fetch wood to boil the *Sugar*. And sometimes, these *Ingenno's* are so great, and so ample, that they contain besides the house of the Master which is well built, many others; either for the *Portugals*, which serve them, or for those *Negroes and Slaves*, which belong unto them; and their number amounts to 50, 60, 80, and sometimes to a hundred Families. There are a score of these *Ingenno's* in the *Capitany of Parayba*. The Land is unequal being in *Mountains, Valleys and Plains*. The *Plains* are for the *Sugar*; the *Valleys* for *Tobacco, Mandioche and Fruits*; and the *Mountains* for *Wood*. The lands which are tilled, yield one hundred for one, their *pastures* feed many *Flocks of Beeves, Sheep, Goats, Hogs, and Horses*, which are strong and laborious. The *Natives* of the Country have some *Aldees*, that is, *Villages*, built after their mode, each *Village* having only four, five, or six houses; but very long like *Halls*, where are 4, or 5, or 600, sometimes 1000, 1200, or 1500 *Inhabitants*; their moveables being only their *Hamaccas*, which are their *Beds*, their *Bow and Arrows* and some *Mandioche*. In each *Aldee* they have a *Captain*, which they chuse among themselves, and they give them a *Portugal* to see what passes: there are of these *Aldees*, in all the *Capitanies* of the *Portugals*, six principal ones in that of *Parayba*, as many in that of *Rio Janerico*, three in *Tamara*, three in *Fernambuck*, and so in others.

The *Capitany of RIO GRANDE*, was once possessed by the *French*, after they had quitted *R. Ganabara*: and here they made alliance with the *Petivares* in the year 1597. *Feliciano Ceca* of *Garoualasco*, *Captain of Parayba* came to assault them; but without forcing them away that time; in 1601 they were quite expelled. The *French* had discovered an excellent Mine of *Silver* at *Copooba*, and another of *Emeralds*, near the Bay of *Moncourou*, between *Rio Grande*, and *Siara*, and rich *Salt-pits* near the Point de *Salinas*. The principal Fortress that the *Portugals* hold here, is *De los tres Reyes*, or the *three Kings*, on the right hand of the River.

The Coast of *Brazile* from *Cape de Frio*, until on this side of that of *St. Augustine*, and so to the middle of the head of *Potengi*, stretches from South to North, and continually regards the East. The rest of this *Capitany*, and that of *Siara Maranhão* and *Para*, extend from East to West, regarding the North, and are the nearest to the *Equinoctial Line*. The Coast of these four last *Capitanies* hath no less extent on the Sea, than that of all the others together, but are worth much less.

The *Capitany of SIARA* is among many *Barbarous People*, and therefore not much frequented; yet is of some trade, by reason of the *Cotton, Chrystal, Precious Stones*, and many sorts of *Wood*, which are here found. They have likewise many *Canes of Sugar*, which are of no use, there being no *Sugar Engines* in the Country.

The *Capitany of MARANHÃO* is an Isle, which, with some others, is found in a Gulph, about twenty five Leagues long, and broad. This Isle hath forty five Leagues Circuit, hath twenty seven Villages, of which *Junaparan* is the chief, and in each Village four, five or 600 men, so that the *French* made account of 10000 men in this Island.

The Air serene, temperate and healthful, the Waters excellent, and which scarce ever corrupt on the Sea. The Land as fruitful as any in *America*, yielding *Brazile-wood, Saffron, Cotton, Red-dye, Lake*, or Rose colour, *Balm, Tobacco, Pepper*; and sometimes *Ambergrease* is gathered on its Coast. The Land is found proper for *Sugar*, and if it were tilled, would produce *Grains*; some say, it hath Mines of *Jasper*, and white and red *Chrystal*, which for hardness surpasses the *Diamonds of Alençon*: It is well watered with fresh Rivers, and pleasant Streams, well clothed with *Woods*, in which are store of *Fowls*. The people are strong of body, live in good health, commonly dying with age; the women being fruitful till eighty years of age, both Sexes go naked until they

they are married, and then their apparel is only from the Waist to the Knees, which is *Manufactures of Cotton, or Feather Works*, in which they are very ingenious.

The *Tapony Tapere*, that is the Country of the *Taponies*, is another Isle East of *Maranhão*, at Full-Sea is an Isle; on the Ebb only, Sands separate it from the Continent. The soil is yet better than that of *Maranhão*, it hath but fifteen Villages, the chief bearing the name of the Country; they are greater and better peopled than those of *Maranhão*.

West of *Tapony Tapere*, and on the firm Land, *Comma*, a City, River, and Country of the same name, is of small value; it is fifteen or sixteen Villages are as well peopled as those of *Tapony Tapere*. Between *Comma*, and *Cayetés*, which approaches *Para*, are divers people descending from the *Toppinambous*, as those of *Maranhão*, and *Comma*, descend from the *Tapoblys*.

The *French* were likewise divers times possessed of the Isle of *Maranhão*. *Ribaut* was here in 1594, *Rivadieri* in 1612. This last built a most commodious place in the Island, and built the Fort of *St. Eloy*; the *Portugals* drove them out in 1614, and built new Forts, *St. Jago*, and *Neustria Senhora*. Among the Rivers that fall into the Gulph of *Maranhão*, *Maré* is the greatest, then *Taboucoiron*.

The *Capitany of PARA* hath a square Fort, seated on a Rock, raised four or five fadom from the neighbouring ground; and well walled, except towards the River; it hath four of five hundred *Portugals*, who gather in the Country *Tobacco, Cottons*, and *Sugar*. This *Capitany* holds beyond the Mouth of the *Amazon*, *Corrupa*, and *Estivado*; and among the Mouths of that River, *Corupine*.

Brazile hath an Air sweet, and temperate, though under the *Torrid Zone*, the daies and nights being almost equal; the freshness of the Sea, Rivers, and ordinary *Dews* contributing much to its wholesomeness. They lie very subject to *Storms*, and *Thunders*; and if it lighten in the evening, it is without *Thunder*; if it *Thunder*, without *Flashes*. That which likewise proves the goodness of the Air, is, that their *Serpents, Snakes, Toads, &c.* are not venomous; but often serve for food to the *Inhabitants*: yet the soil is more proper for the production of *Fruits, Pastures*, and *Pulse*, than the *Grains*, or *Vines of Europe*. They carry them *Wine*, and *Flour*, *Corn* being subject to spoil on the Sea. The *Natives* use *Rice* and *Manioche* to make their Bread. They have likewise quantity of *Pulse*, Trees which bear excellent *Fruits, Herbs*, four-footed *Beasts, Birds*, and *Fish* in great abundance, many of which are not known to us; many sorts of *Palm-trees*, which yield them great *Commodities*: they have some Mines of *Gold*, but more of *Silver*; but the riches of *Brazile* is drawn from the *Sugars*, and the *Brazile-wood*, which comes from their *Araboutan*, a mighty Tree, which bears no Fruit. They have abundance of *Parroquets*; among their *Monkeys*, they have black ones, and of divers colours, the most part very pleasant. The skin of the *Tapirousson*, curried, becomes so hard, that it makes Bucklers, not to be pierced by the strongest shot Arrow.

The *Brazilians* are of a mean stature, gross headed, large shouldered, of a reddish colour, their skins tawny; they live commonly to a hundred and fifty years, and free from diseases, caring for nothing but War and Vengeance. They wander most part of their time in *Hunting, Fishing, and Feasting*; in which *Manioche* furnishes them with *Bread*; *Cumin-seed*, with *Drink*; and and the *Flesh of Beasts*, or of their Enemies cut in gobbets, and some *Fish*, are their most excellent meats. The men are very cruel, forgetful of courtesies received, and mindful of injuries. The Women are very lascivious, they are delivered with little or no pain, and immediately go about their affairs, and not observing the custom of a Months lying in, as is used among us. They let their hair grow long, which ordinarily hangeth over their shoulders; both Sexes go naked, especially, till Married: They are esteemed excellent *Swimmers*; and *divers*, being able to stay an hour together under water. They paint themselves with divers colours, all over the body, on which they leave

The Country
or the Isle of
the *Taponies*.

The Country
and City of
Comma, and
its Commodities.

The Capitany
of *Para*, with
its Commodities.

Of a temperate
Air.

Serpents;
Toads, &c. not
venomous
here.

Fertility and
Commodities.

The Inhabitants
of *Brazile*,
and what they
are addicted
unto; their
Customs, &c.
their Habits.

no hair, not so much as on their *Eyelids*, but only a Crown about their *Head*; and, fasten a Bone, which is well polished, and some little Stone, which is esteemed amongst them, in their upper *Lip*, and *Cheeks*. Others cut their skin in *Figures*, and mixing a certain tincture it never comes out. They make *Bonnets*, *Frassetts*, *Ruffs*, *Bands*, *Cloaks*, *Girdles*, *Garters*, and *Bracelets*, with *Feathers* of divers colours, which they work, and mix the colours together very excellently. The *Brazilians* which have stayed among the *Portugals*, are, for the most part, become *Christians*; the others wander without Religion.

There is a great diversity of Tongues among them; inasmuch, that *Jarric* assures us, that in his time he observed sixty different ones; and though they have no *Sciences*, yet have they some knowledge of the course of the *Sun*, *Moon*, and *Stars*, giving them divers names, and calling the *Eclipses* nights of the *Sun* and *Moon*.

All the Wood of *Brazile* belongs unto the King of *Portugal*, private persons not being permitted to trade in it. Their riches come from *Whale-Oyl*, *Confetti*, *Conjurers*, *Tobacco*, *Silver*, *Hides*, and other *Commodities*; but principally from *Sugar*, no Country in the World exporting so much as *Brazile* doth. The Isle *Madera* hath but ten *Sugar Engines*, the Isle of *St. Thomas* possibly less; but *Brazile* 4 or 500.

As for the names of *Mestizos*, and *Mulates*, which divers times have been met with; it is to be observed, that the *Portugals* being long since here established, and having from time to time caused to be transported a great many *Negroes*, as well Men as Women to serve them; This mixture of divers Nations, and divers colours, hath made them to distinguish their Children, and to call those who came from Father and Mother of the *Europeans*, *Mozombo*; those who came from an *European* and a *Brazilian*, *Mestiz*, or *Mamelucco*; those from an *European* and a *Negroess*, *Mulates*; those from a *Brazilian* and a *Negroess*, *Cariboco*; those from the Father and Mother of *Ethiopian*, *Criato*. Moreover, it hath been known that an *Ethiopian* woman whose Husband was likewise an *Ethiopian*, hath brought forth two Children, the one black, and the other white; and a *Brazilian* Woman, whose Husband was likewise a *Brazilian*, to bring forth two, the one white, and the other black; and oft-times blacks have whites, and whites blacks; and there are to be seen white *Ethiopian*s, that is to say, in all the features of their face, and in their hair, all the proportions of an *Ethiopian*, but with skin and hair white.

Before *Brazile* lyeth a train of low Rocks, but of a small breadth; but which continue almost all along the Coast, leaving but certain overtures by which the Rivers discharge themselves into the Sea. *Ships* that go or return from *Brazile*, pass necessarily by these overtures, or openings, which oft-times proves very dangerous.

P A R A -

P A R A G U A Y or, Rio de la Plata.

The Province of *PARAGUAY*, or *Rio de la Plata*, (other than the Province of *la Plata* in *Peru*) is on the River which those of the Country call *Paraguay*, the *Spaniards* *Rio de la Plata*, from whence it takes its name: We may comprehend under the name of *Paraguay*, or *Rio de la Plata*, all the neighbouring Provinces, and those which are on the Rivers falling into the *Paraguay*; and consider them in three, or in seven parts: To wit, in *Paraguay* or *Rio de la Plata*, which may make the higher, and lower part of that which is upon the River; *Intero*, *Chaco* and *Tucuman*, which are on the Rivers, which descend on the right hand, and into *Parana*, *Guaye* and *Urugui*, which are on the Rivers which descend on the left hand: These are towards *Brazile*, and the *Mer del Nort*; the other two, towards *Peru* and *Chili*, and the two first in the middle.

The River of *Paraguay*, on *de la Plata*, hath its springs in the Lake of *Xarajes* on the confines of *Peru* and *Brazile*; and descending from north to South, turns in the end to South-East, receives a great many fair and large Rivers, among others, *Putomayo*, *Vermejo*, or *Salado*, and *la Garzarane* on one side, *Guaxarape*, *Parana*, and *Urugui* on the other.

The *Paraguay* falling into the Sea makes a Gulf of fifty and odd Leagues wide, between the Capes of *St. Mary* and *St. Anthony*; and an hundred and fifty Leagues within Land, and is ten or twelve, and descending farther fifteen, twenty or five and twenty Leagues broad; but of so little depth, and so cumbered with Rocks and Banks, that what with them, and the sudden storms which often rise from the South, sailing up it proves very dangerous.

The particular Province of *Paraguay*, in the highest part of the River is little known, nor have the *Spaniards* here any Colonies; yet it bears its name common with the River, and communicates it to all the neighbouring quarters: The People are not so barbarous as in *Brazile*; some adding themselves to *Husbandry*, in which the men till and sow the ground, and the Women reap and gather in Harvest; others know how to make *Stuffs*, *Vestments*, *Spin Cotton*, &c.

Below *Paraguay* is the Province *de la Plata*, where the *Spaniards* have some Colonies; viz. 1. The *Assumption* being the chief place in this Countrey, is well built, and very well frequented, neighboured by a great Lake, in the midst of which is a great Rock, which exalteth its head about one hundred fathom above the water; this Town is said to be inhabited by three sorts of people: viz. 1. By natural *Spaniards* who are Masters of it, to the number of about four hundred families. 2. *Mulattoes*, being those that are born of *Spaniards* and *Negroes*, of which there are said to be several thousands; and lastly, by *Mestizo's*, which are such as are begotten by the *Spaniards* upon the *Natives*, and these are not in such great number: The next Town of note is *Buenos Ayres*, seated on the ascent of a small Hill, on the Southern Bank of the River *de la Plata*, said to contain about two hundred families of *Spaniards*. It is encompassed with a Mud-Wall, but its chiefest strength is in its Castle, which is but small neither over-well provided with *Ordinance* and *Ammunition*; the other Towns are, *Las Siete Corrientes*, *St. Fe* and *St. Spiritu*, or *Torre di Gaboto*; the two last, and *Buenos Ayres*, are on the right side; the *Assumption*, and *Las Corrientes*, on the left, and this two hundred and fifty, or three hundred Leagues from the Sea; *Buenos Ayres* little less than an hundred; *St. Fe* little more; the *Assumption* alone is on the *Paraguay*, *Las Siete Corrientes* where the *Parana*, &c. falls into the *Paraguay*.

The River of
Paraguay described.

The Province
of *Paraguay* described.
Its People

The Province
de la Plata
with its Colonies described.

The signification of *Paraguay*, & of the *Plata*.

Chaco described with its several Inhabitants.

Tucuman bounded, and described.

The Tucumans famous.

St. Jago del Estero.

Its Commodities.

Several places of note in the way to Peru, described, with their Commodities, & fertility of the Country.

Its Inhabitants.

This name of *Paraguay* is given by the Natives of the Country, and signifies a River of *Feathers*, either because there are here found great quantities of *Birds*, whose *Feathers* are various and of divers colours; or because those of the Country, dress and adorn themselves with those *Feathers*. The name of *la Plata* hath been given by the *Spaniards*, and signifies *Silver*; because the first that came to them from *Peru*, came down this River.

CHACO hath its soil fat, fruitful, and enterlaced with many Rivers. It is inhabited by divers Nations, whose *Idioms* are very different. The *Tobares* have about fifty thousand souls. The *Mathaguicis* thirty thousand, but not so valiant, as the *Chiriguanes*, a Nation much esteemed; and which will not suffer the *Spaniards* to inhabit amongst them; they are in continual War with the *Mathaguicis*, making *Slaves* of as many as they can catch, which made these call the *Spaniards* to their aid. The *Mocorios* and *Zipatalagars* have no fewer people than the *Tobares*, and all so valiant in War; that the *Chiriguanes* dare not assault them. There is likewise another Nation, whose Language, as they say, scarce yields to the *Latine*; but the beauty of the *Orechs*, is in the greatness of their *Ears*. The most part of these people are well-made, very tall, most of them being about six foot high, they are of an airy and lively spirit.

TUCUMAN is very large, being no less than three hundred Leagues long and broad; yet it touches not the Sea on any side; *la Plata* bounds it on the East, *Chili* on the West, *Peru* and *Chaco* on the North, and the *Magellanick Land* on the South. The Air and Soil should be excellent; this Country disengaging itself from the *Torrid Zone*, and advancing towards the middle of the *Temperate Zone*; and almost all the Rivers having their courses towards the East, which brings some refreshment. And moreover they have but two seasons in the year, each of six months: the *Summer* from about the twentieth of *March*, unto the twentieth of *September*, and the *Winter*, from *September* to *March*.

Among the People of these quarters, the *Tucumans* are the most famous, since they have given their name to the Province; then the *Zurios*, *Diaguies*, &c. The *Castilians* have established here divers Colonies, that the Province of *la Plata* might have communication with those of *Peru* and *Chili*. St. Jago del Estero formerly *Varco*, is in the mid-way between *Buenos Ayres* and *Potosi*; two hundred and fifty Leagues from this, and little less from the other. This place is honoured with the seat of the Governor of the Province, as also with a *Bishops See*, and divers other Officers of the King. The Land is furnished with *Wool*, *Cotton*, *Wood*, with which they make and dye their *Manufactures*, *Cocheneile*, &c. which they carry to the nearest *Capitanies* of *Brazile*, making great profit by them.

After St. Jago del Estero; there is likewise on the way to *Peru*, 1. St. Michael de Tucuman, seated at the foot of a rocky Mountain, but near a fertile Soil, both for *Corn* and *Pasturage*. 2. *Nuestra Sennora de Talavera*, situated on the River *Salado*, in a fruitful Soil, abounding plentifully in *Cotton*, of which the Inhabitants make several *Manufactures*, in which they are so industrious, that they have gained by their Trade (to the Mines of *Potosi* a hundred and forty Leagues distant, and other places,) great riches. 3. *Las Juntas*. 4. St. Salvador. 5. *Salta*. 6. *Corduba*, on another side, and there where two great Waies meet, the one of *Buenos Ayres*, to *Potosi* by St. Jago del Estero, and the other of *Sancto Fe* and *Spiritu Sancto* to St. Jago del Estremadura in *Chili* by St. Luyz, which makes this place of some consideration: Besides that the Air is temperate, and the Soil fruitful and pleasant, and which yields *Grains* and *Fruits*, it is well watered with fresh streams, in which are good *Fish*. In their *Woods* they have *Fowls*, much *Venison* and other *Beasts*; they have *Wine*, *Salt*, and in their Mountains appearance of some Mines of *Silver*. The Colony is of three hundred, others say six hundred *Spaniards*. Their principal trade is on *Peru* and *Chili* side. The Natives are much civilized both in habit and manners, imitating the *Spaniards*, from whom they are willing to receive instructions.

The

The Provinces of *PARANA*, *GUAYR* and *VRAIG* pass under the name of *Paraguay*, in the relations which the *Fathers Jesuits* give. It says, that these *Fathers* having long observed that there was an innumerable company of Souls, which might be converted to Christianity; they cast themselves among these *Barbarians*, learned their tongue, drew them from the *Woods*, *Mountains*, and hidden *Caves*; assembled them in divers habitations; and by this means lead them to a sociable life, taught them first *Tillage*, and the most necessary *Arts* and *Manufactures*; then to read and write, to musick, singing and dancing, but above all instructed them in the Christian Religion, and Piety.

These *Habitations* are composed of near a thousand *Families*; and each *Family* besides the *Father*, *Mother*, and the *Children*; receive often some aged person, not able to work, or some *Orphan*. So soon as a *Habitation* is established, the *Fathers* introduce the Government they are to follow; give them *Magistrates* and *Officers*, chosen among the most capable of their Body, declare to them the polity and rules they are to observe, take care that the fields assigned to each family be tilled and sowed in due time, that their flocks be well kept; and if there happen any contest among them, what the *Fathers* ordain stands as a sentence without revocation.

Of these *Habitations*, *Parana* hath six, St. Ignatius on the River of *Tibiquari*, *Itapoa* of the *Incarnation*, and the *Holy Sacrament* on the River of *Parana*, N. D. de *Iguazu* on that of *Iguazu*, *Acaraig* or *la Nativita de N. D.* likewise on the *Parana*. The Air in all these *Habitations* is good; the Soil fertile, they have too much *Wood*, little *Pasturage*; and near *Iguazu* little *Fish*, by reason of the *Cataract*.

The Province of *Guayr* is under the *Tropic of Capricorn*, advancing itself unto *Brazile*. There hath been here, for a good continuance of time two or three Colonies of *Castilians*; *Ciudad Real*, or *Ontiveros*, and sometimes *Guayr*, after the name of the Province. *Villarica*, and St. Paul, which some esteem in *Brazile*. The habitations for those of the Country, are *Nuestra Sennora de Loretto*, and St. Ignatius on the *Parana*; St. Francis Xavier *Li Incarnation*, and St. Joseph on the *Tibagiva*; the seven *Arch-Angels*, and St. Paul in the Land of great *Tajoha*, towards *Brazile*.

Below *Ciudad Real*, there where is the separation of the two Provinces of *Parana* and *Guayr*, the River *Parana* makes a *Cataract*, as remarkable as any in the World. This River precipitating itself from a very high Rock, finds itself likewise engaged among very high Rocks for the space of fifteen or sixteen Leagues, where with a great declension it strikes against some, traverses others; divides its waters into many Branches, re-assembles them; and after having been so long in foam and froth, disengaged from these Rocks, it repasses; but in every hour of the day once only is heard, at the bottom of the River, a certain Lowing, which raiseth up the waters, but which endures but for a moment, and the River retakes its ordinary course, which is Navigable above and below the *Cataract*.

The Province of *Urvaig* is on the Sea, and between *Brazile*, and the Mouth of the *Paraguay*; it takes its name from the River of *Urvaig*, that is, of *Snails*, by reason of the prodigious quantity here found. Its habitations are, *La Concepcion*, there where the *Urvaig* falls into the *Paraguay*; St. Nicholas, on the River *Piration*; St. Francis Xavier, up within Land; and likewise on the *Urvaig*; *Ibicuit*, or the *Visitation*, on the *Paraguay*, and almost directly opposite to *Buenos Ayres*, on the other side.

But there hath been no relation of these Parts since those of 1626, and 1627, which were Printed in 1636 in *Antwerp*, and in 1637 in *France*. If these people have since inclined themselves to Christianity, as those Relations say they had begun to do, no doubt, but they are by this time, all or the greatest part, Christians.

The province of *Parana*, *Guayr* & *Vraig*.

Several good orders observed by them.

The province of *Guayr*, with its Colonies & habitations described.

The River *Parana*.

The province of *Urvaig* with its chief places described.

The Magellanick Land, and Island.

The Magellanick Land bounded.

The Streight of Magellan first discovered by Magellan the Portuguese.

The length & breadth of this Streight.

South of *Chili*, *Tucuman*, and *Rio de la Plata*, lies a great Region, and a great many of Isles, which we pass under the name of the *MAGELLANICKS*. They make together the last, and most Southern part of *America Meridionalis*: washed on the East by the *Mer del Nort*, on the West by the *Mer del Sud*, or the *Pacificque-Sea*; on the South by the *Magellanick-Sea*, which may in general be extended over all the Coasts of these *Magellanick-Lands and Islands*.

The Streight of *Magellan* only, formerly, rendered all these Quarters famous; because that the People of *Europe*, and particularly the *Castilians*, seeking a passage other than that of the *Cape of Good-Hope*, to go to the *Moluccoes*, and *East-Indies*; *Magellan*, a *Portugal Gentleman*, but in the name and service of the King of *Castile* for some discontent he had received in the payment of his wages in *Portugal*, was the first that found this Streight at the extremity of *America Meridionalis*; and who passing from *Mer del Nort*, unto that *Del Sud*, between the 21 of *October*, and the 27, or 28 of *November*; in the year 1520, gave means, not only to the *Castilians*, to pretend the discovery of the *Moluccoes*, by the West, against the *Portugals*, who boasted to have first discovered them by the East: but likewise shewed a way to make the whole circuit of the *Terrestrial Globe*, which certainly had never before been done.

The two openings of our Streight; as well towards us, and the *Mer del Nort*, as on the other side; and towards the *Mer del Sud*, are between the 52, and 53 Degrees of *Latitude*, the middle descending unto the 54. And the two *Capes* of the first opening, are that of the *Virgins*, on the right hand, and on the *Continent*; and that of *St. Severin*, or of *St. Esprit*, on the left, and in the *Magellanick Isles*, or *Terra del Fogo*. The two *Capes* which end the other opening, are *Cape Victory*, on the right hand, and *Cape Desired*, on the left.

The length of this Streight is near two hundred Leagues; Its breadth only two, three, six, ten Leagues, and sometimes more; incommodious for the most part, being subject to *Whirl-Pools*. The Waves of the *Mer del Sud* predominate for fifty and odd Leagues, the rest is beaten on by those of the *Mer del Nort*; and it is observed, that so long as the *Mer del Sud* predominates, the Streight is lockt between very high Mountains and Rocks; always covered with Snow, and which seem to touch on the other; which makes the approach difficult on this side; and withal, the Sea is exceeding deep. The bottom of that which is beaten by the *Mer del Nort*, is easily found, and the *Fields and Valleys*, according to the Season, are very pleasant, both on the one and the other side. And moreover, here the Streight much enlarges it self, and hath store of commodious *Ports and Roads*, not far distant from one another; where the waters likewise are good, and the *Wood* which is found in the Mountains, above the *Coast*, hath something of *Cinamon*, and being put in the fire, renders an agreeable *Odour*.

So soon as the discovery of this Streight was known in *Spain*, the *Castilians* had a design to make themselves Masters of it; with an intent to hinder all other Nations from passing. In 1523 *Dom. Gutierrez Carvajal*, Bishop of *Plaisance*, sent in the name of *Charles* the fifth, four Ships, to make it more particularly; but this Voyage proved very unfortunate, for three of the Ships perished in the Streight, and the fourth retired (with no small hurt) to *Lima*. In 1526 *Garcia de Loyosa* was likewise here for the same intent, which proved also fatal; for the *Admiral* coming out of the Streight was lost, as also some at the *Moluccoes*. In 1535 one *Simon de Alcazova* entered it; but the mutiny which was among his people was the cause of his loss and ill success. *Dom. Gutierrez*

Gutierrez Carvajal, Bishop of *Plaisance*, sent other three Vessels, in 1539, of which the *Admiral* was lost, one returned back, and the third passed on. Some others there were which went (all of which were *Castilians*) some by the *Coast* of *Spain*, others by the *Coast* of *Peru*; but none could ever find a way to seize this Streight, whereby to hinder a passage to others.

For in 1575 Sir *Francis Drake*, happily passed this Streight, came into the *Mer del Sud*, pillaged and burned along the *Coast* of *Chili*, and *Peru*, quantity of *Spanish* Vessels, and making a very rich booty, he returned into *England*.

This course of the *English* very much alarm'd *Peru*, and was the cause that the *Vice-Roy* sent *Dom. Pedro Sarmiento*, to take full knowledge, and make report in *Spain* of all the *Coasts*, *Harbours*, *Anchors*, and particularly of places where *Forts* might be built, and *Colonies* established in this Streight. This report made in *Spain*, *Dom. Diego de Valdes* was sent with twenty three Vessels, and twenty five hundred men. But this voyage was likewise unhappy; for seven or eight Ships, with about seven or eight hundred men, were lost almost in sight of *Spain*; also some others of his Ships, with about three or four hundred men, likewise perished during the Voyage; and *Valdes* returned into *Spain*, with seven or eight of his Ships. *Sarmiento* with four remaining was at this Streight, built *Nombre de Jesus* at the beginning of the Streight, and left there a hundred and fifty men, and began farther in the *Ciudad del Rey Philippe*: but the want of many things, and the cold, too harsh for the *Spaniards*, made the last work cease, and the men be brought back to the first Colony. *Pedro Sarmiento* returning into *Spain*, fell into the hands of the *English*, near the *Coast* of *Brazil*; and on the other side, *Famine*, *Miseries*, and the Cruelties of the *Inhabitants* of the Streight, soon destroyed the Colony he had left.

After *Drake*, many other *English* and *Hollanders* passed at divers times, and in divers years. *Spilbergen* in 1615, more happily than the rest, having taken his time in *January* and *February*, which is the Summer of these Quarters, the Sun returning from *Capricorn*.

But in 1617 a hundred years after *Magellan*, *Isaac le Maire*, a *Hollander*, having discovered another Streight incomparably more easie to pass than that of *Magellan*, this only is now made use of, and called the *Streight Dele Maire*. It is between the 55 and 55½ degrees of *Septentrional Latitude*. It hath throughout 10 or 12 Leagues of length and breadth; and so soon as it is passed, there is found a very great Sea, there where we have formerly believed to be a Land so great, that some would make it a third *Continent* under the name of *Terra Australis* or *Terra Incognita*, and *Magellanica*.

The *Inhabitants* of the Streight of *Magellan*, *Maire*, and the *Magellanick Lands*, are very barbarous, having very sharp and dangerous Teeth; they go almost naked, though in a Country very cold; they have neither Religion nor Policy; they are born white, but paint some part of their body red, and others black: And this Painting is a Band drawn straight from Head to Foot, or else cross their Body, or slooping; the rest is in its natural colour, or else sometimes varied with divers colours. They garnish their Arrows and Javelins with Fish-bones, or with Stones very sharp, of which they make their Knives; they use likewise Clubs and Slings.

Amongst these People are the *Patagons*, a particular Nation in the *Continent*, which some call the *Race of Toremén*. If report be true, they are the greatest men, known at present in any part of the World: They are said to be no less than ten foot high, and we are assured, that the greatest men that were with *Magellan*, or with the *English* and *Hollanders*, that passed this Streight, reached but to their Girdle.

But

Sir Francis Drake in this Streight.

The Streight Dele Maire discovered by Isaac le Maire, a Hollander.

The Inhabitants of Magellan, Maire, and the Magellanick Land.

The Patagons a sort of people.

But it is time to leave *America*. The first expence made to go thither, was not of above 15 or 16000 Duckats; which were advanced by *Lewis de St. Ange*, Secretary of State, and not taken out of the Treasuries of the Kings of *Castile* and *Aragon*, who then protested they had not so much money to expend; yet notwithstanding this little hath returned them infinite riches. *Christopher Columbus* sailed on *Hispaniola*, and the Neighbouring Isles a little after 1492. *Americus Vesputius* of *Brazil* in 1497. *Ferdinand Cortes* took *Mexico* in 1519. *Pizzarre*, *Peru* in 1529. So others have seized of divers parts of *America*, and still of those which are the best; and have brought thence so much Gold, Silver and Riches, that they have filled almost all *Europe*; and made those *Estates*, *Lordships* and *Commodities* on this side, which before were valued but at Twenty pence, Twenty shillings, or Twenty thousand pounds worth, now a hundred times as much.

The Spaniards have received great losses from the English and Dutch.

But we must confess, that these discoveries, and these conquests of new Lands hath cost *Spain* store of men, not so much in the War as on the Sea. In 1590. a hundred *Spanish* Ships laden with very great riches to return to *Europe*, passing in company near *Florida*, a tempest surprized them, and cast them all away, save one, whom *Linscot* reports to have seen in *Tercera*; and this Author assures us, that at the same time divers other Tempests, or divers *English* *Rovers* took away or sunk another hundred of *Spanish* Ships; so that of 220 parted the year before from *New Spain*, *St. Domingo*, *Flaviana*, *Cape Verde*, *Brazil*, *Guinea* and other places, not above 14 or 15 escaped shipwreck or the *English* *Rovers*.

Likewise after, and at other times, sometimes the *English*, sometimes the *Hollanders* have not only taken abundance of *Spanish* Vessels on the Sea, but likewise divers places on Land, and sometimes whole *Provinces* and *Islands*. The *Hollanders* held not long since a good part of *Brazil*; the *English* hold at present *Barbadoes*, *Jamaica*, and some other places in the *Isles* and *Lands* about it. And all those *Isles* which are on this side *Hispaniola*, are in the hands of the *English*, *French* and *Hollanders*, who likewise establish divers *Colonies* on the Coast of *Guiana*; which if they subsist, those *Isles* are not already more troublesome Thorns to *Mexico* and *Terra-Firma*, then these *Colonies* in *Guiana* will be to *Terra-Firma*, *Peru* and *Brazil*.

The Trade of America in general.

To give a small touch of the Traffick of this *New World*, it is observed to give employment to many Ships of great burthen, and that of several Nations, as well *Europeans*, as others, by which they have gained much riches; in which, *England*, *Spain*, *France*, *Portugal*, *Holland* &c. have been large traders. To sum up the rich staple commodities that it produceth, as also what Commodities they receive in exchange, will not be unnecessary.

Its Fruits and Commodities.

First then, Its Earth yieldeth Grains, excellent Fruits, Plants, Sugar, *Indico*, *Tobacco*, *Ginger*, *Long-Pepper* and other Spices, Several Medicinal Drugs, Cotton, of which, as also of the Feathers of their Birds, they make excellent and curious Manufactures. In the bowels of the Earth lie hid, in abundance of Mines, Gold, Silver, Iron, Lead, Tin and Copper; there is also plenty of Quick-silver, Amber, Precious Stones, Pearls, Bezoar, Amber-Greece, Gum Arabic, and several Precious Gums, *Cocheneille*, Saffron, *Christall*, excellent Balsom, Rosin, Salt, Honey, Wax, Rich Furs, Ox-Hides, Tallow, Whale-Oil, Dried Fish, Pitch, Tar, Jallop, *Salsaperilla*, *Gayac*, Turbith. Several excellent Woods, as *Campechi*, *Brazil*, *Lignum-Vitæ*, *Green Ebony*, Cedar, Cypress, Firrs, and excellent Wood for building of Ships.

Commodities sent them in exchange.

For these and other such rich commodities they take in exchange, Beads, Necklaces, Bracelets, and the like Toys; as also Looking-Glasses, Ribbons, Needles, Pins, and all sorts of Haberdashery Ware, also Knives, Hatchets, Swords, Nails, Hammers, and other Instruments made of Iron; with several other of the like cheap Commodities.

We

We have thus comprised all that seemed most necessary concerning *America*: true it is, whole Volumes might be made only touching the Nature and Propriety of their Grains, Herbs, Plants, Fruits, Fowl, Beasts and Fish, which are all different from ours; yet those which have been carried from hence, have thrived and multiplied exceeding well, either in one place or another: But of all our Beasts, nothing so much astonished them as our Horses; and it was near a hundred years in *Peru*, and other parts of *America*, before those People would be perswaded to mount on them.

F I N I S.